# BD EEC

## Accessories


**INT**


**MBI**


**RA**


**REGC**


**RI**


**RM**

**DOUBLE INLET CENTRIFUGAL FAN WITH ELECTRONIC MOTOR EEC**

MANUFACTURING FEATURES
• Galvanised steel sheet housing.
• Polyamide impeller reinforced with fibreglass in models 7/7, 9/9, 10/10 and 12/12. Galvanised steel sheet impeller for all range.
• Double inlet forward curved impeller.
• Supplied with mounting feet (included in price).
• Motor fixing with an exclusive system designed by Casals through flexible arms and silent blocks to avoid vibration. Flexible arms in compliance with the ROHS 2002/95/EC Directive (Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipments).
• PM brushless motor (permanent magnets), synchronous, electronically commutated, high efficiency and low sound level. Specially designed for fans with electronic operation and control in deported box IP65.
Working range: from 400 to 1200-2000rpm (depending on the models)
Motor with IP54 protection and class F insulation. IP 65 drive case
Power: 220V ± 10% single phase
Power frequency: 50 / 60Hz
Operating temperature range: -20ºC to 50ºC
Speed control through signal 0-10V or PWM

APPLICATIONS
Designed for assembly in equipment:
• Ventilation boxes and air handling units.
• Centrifugal heaters.
• Industrial and professional kitchen hoods.
• Maximum working temperature: 50ºC.

UNDER REQUEST
• Galvanized sheet impeller
• MBI assembled

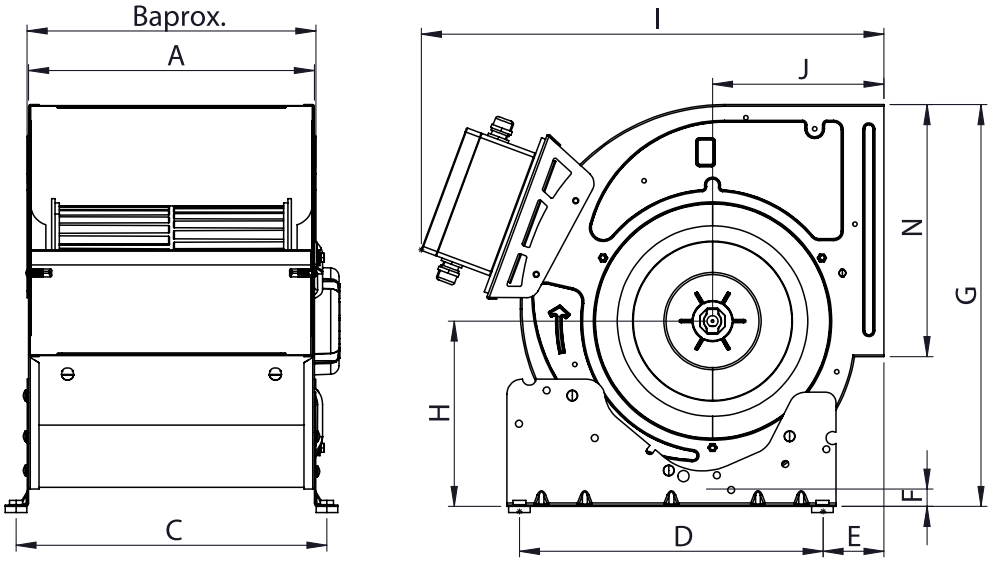
# Technical data

## Single-phase motor

| Code | Model | R.P.M. | Rated I. A 230V | Rated power kW | Max. Airflow m³/h | Sound db (A)** | Weight kg | Connect. diagram |
|---|---|---|---|---|---|---|---|---|
| 251109261C200 | BD 7/7 EEC | 2000 | 5,00 | 0,37 | 2.970 | 45 | 10 | 1 |
| 251269261C200V2 | BD 9/7 EEC | 2000 | 5,8 | 0,75 | 3.900 | 51 | 14,50 | 1 |
| 251289261C200V2 | BD 9/9 EEC | 2000 | 5,8 | 0,75 | 4.250 | 52 | 15 | 1 |
| 251339261C180 | BD 10/8 EEC | 1800 | 10,00 | 1,50 | 5.860 | 55 | 20 | 1 |
| 251379261C180 | BD 10/10 EEC | 1800 | 10,00 | 1,50 | 6.200 | 54 | 21 | 1 |
| 251529261C120 | BD 12/9 EEC | 1200 | 10,00 | 1,50 | 6.320 | 54 | 25 | 1 |
| 251609261C120 | BD 12/12 EEC | 1200 | 10,00 | 1,50 | 7.110 | 53 | 34 | 1 |

**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

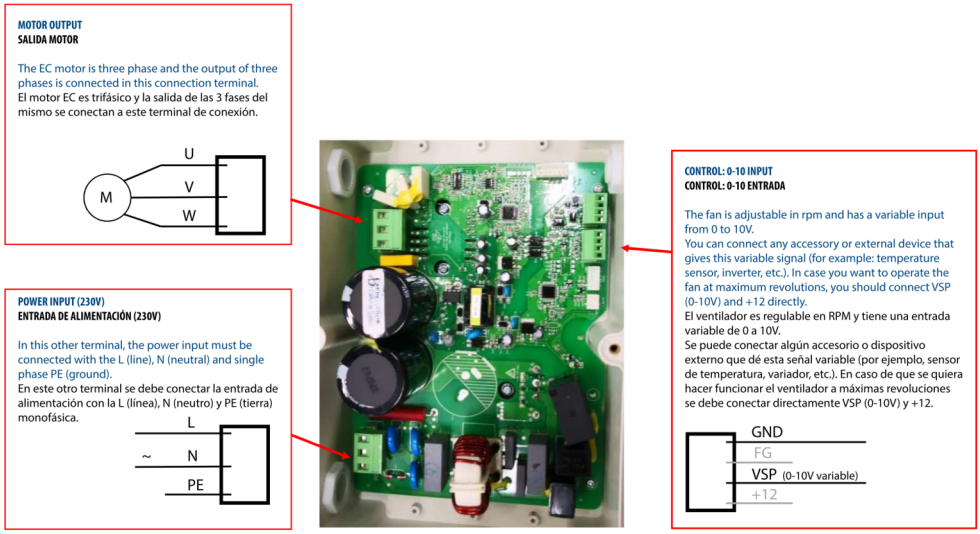



| Model | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| BD 7/7 EEC | 230 | 290 | 259 | 245 | 48.5 | 9.5 | 337 | 150 | 436 |
| BD 9/7 EEC | 233 | 328 | 262 | 245 | 70 | 19 | 407 | 191 | 495 |
| BD 9/9 EEC | 301 | 328 | 330 | 245 | 70 | 19 | 407 | 191 | 495 |
| BD 10/8 EEC | 265 | 303 | 294 | 350 | 70.5 | 20 | 464 | 214 | 534 |
| BD 10/10 EEC | 329 | 343 | 359 | 350 | 70.5 | 20 | 464 | 214 | 534 |
| BD 12/9 EEC | 310 | 360 | 339 | 350 | 77 | 17 | 536 | 244 | 590 |
| BD 12/12 EEC | 396 | 416 | 425 | 350 | 77 | 17 | 536 | 244 | 590 |

| Model | J | N |
|---|---|---|
| BD 7/7 EEC | 153 | 208 |
| BD 9/7 EEC | 184 | 260 |
| BD 9/9 EEC | 184 | 260 |
| BD 10/8 EEC | 198 | 291 |
| BD 10/10 EEC | 198 | 291 |
| BD 12/9 EEC | 230 | 343.5 |
| BD 12/12 EEC | 230 | 343.5 |

# Wiring diagram

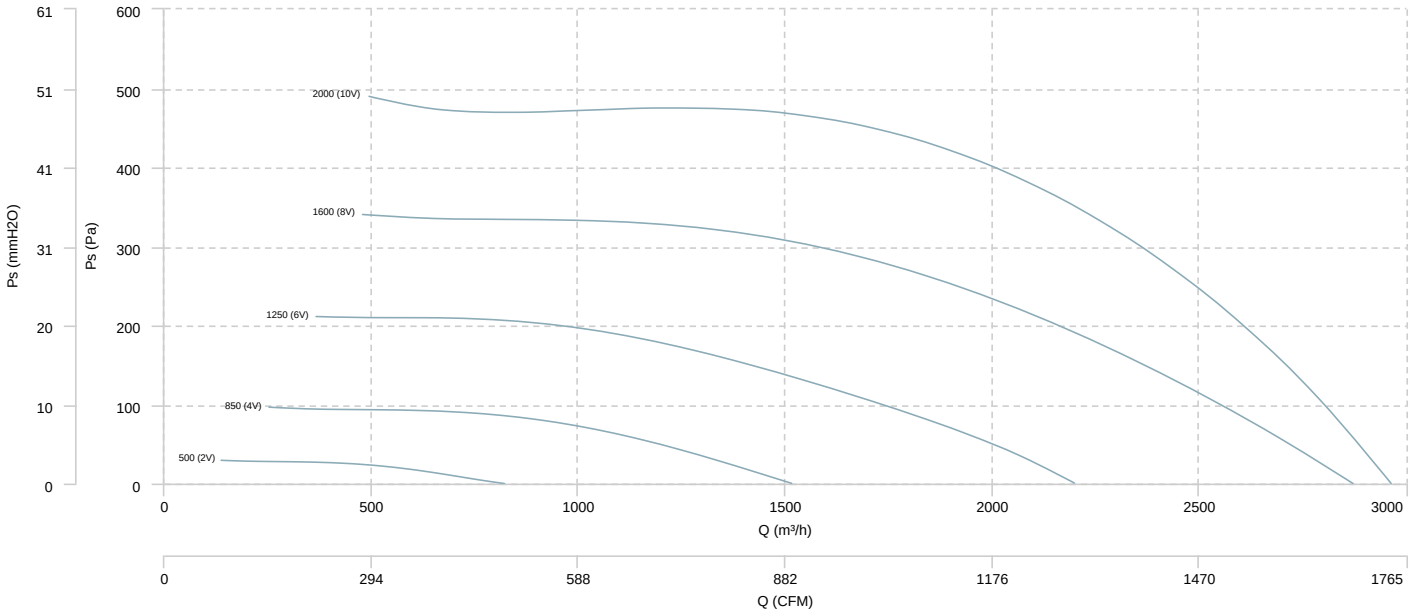
## Wiring diagram Nº 1



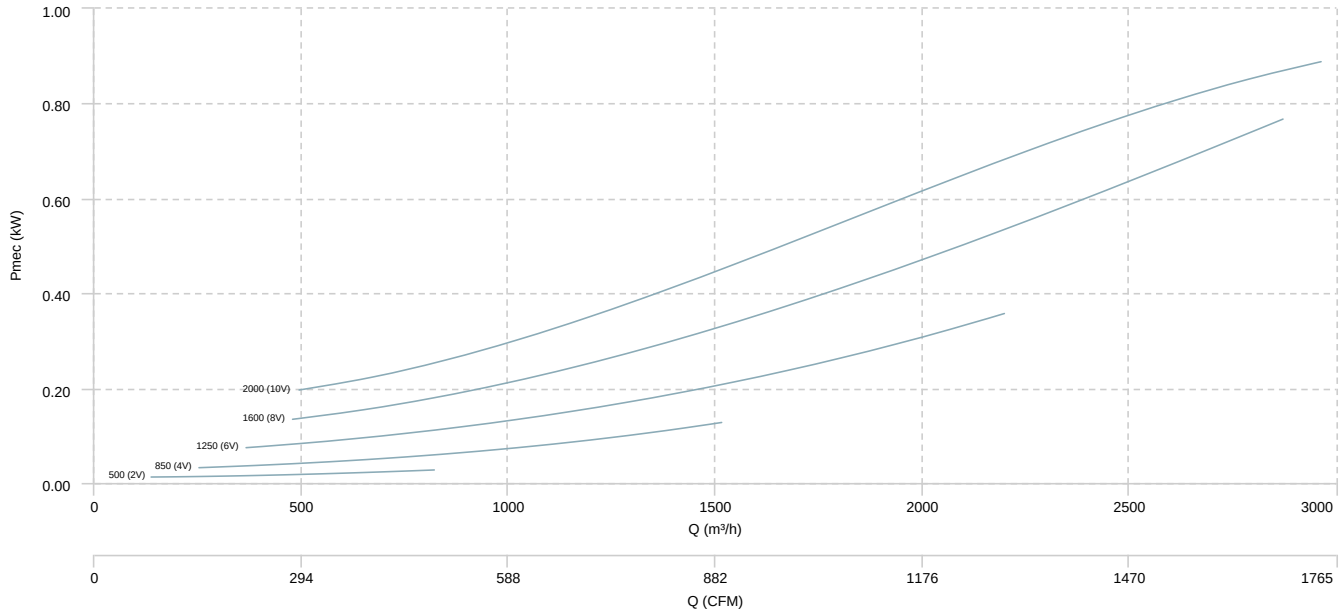
# CHARACTERISCTIC CURVE

BD 7/7 EEC

## AIR FLOW - PRESSURE

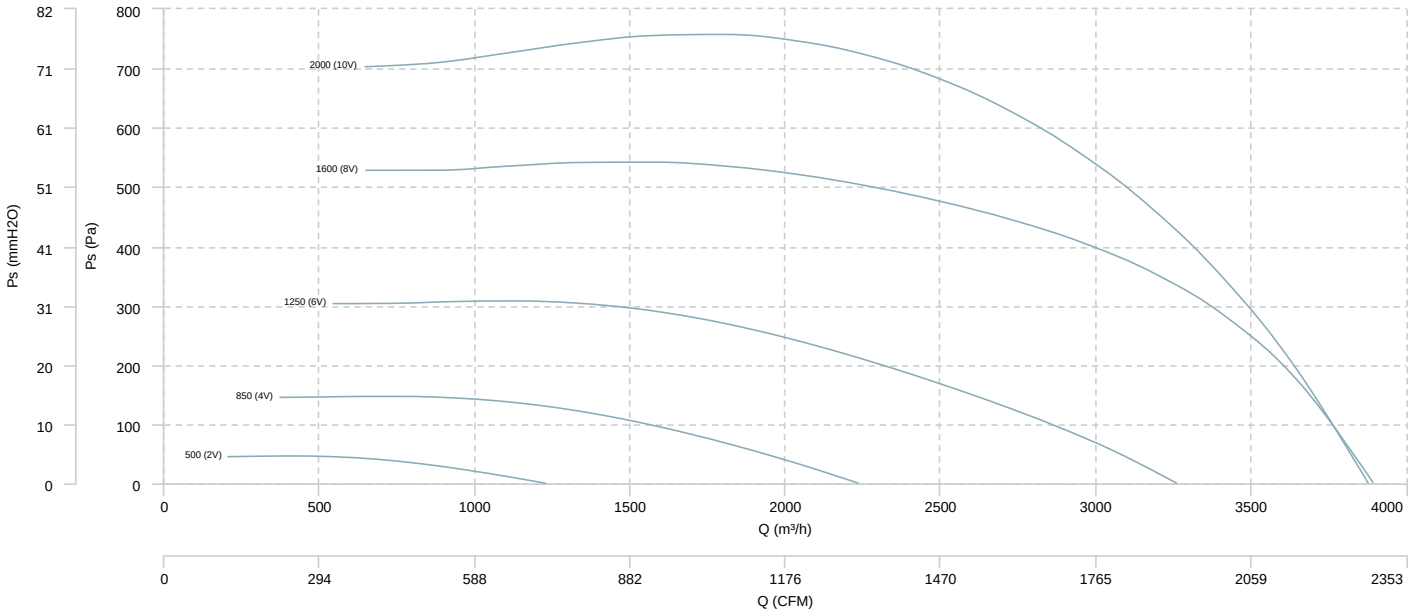



## AIR FLOW - MECHANICAL POWER

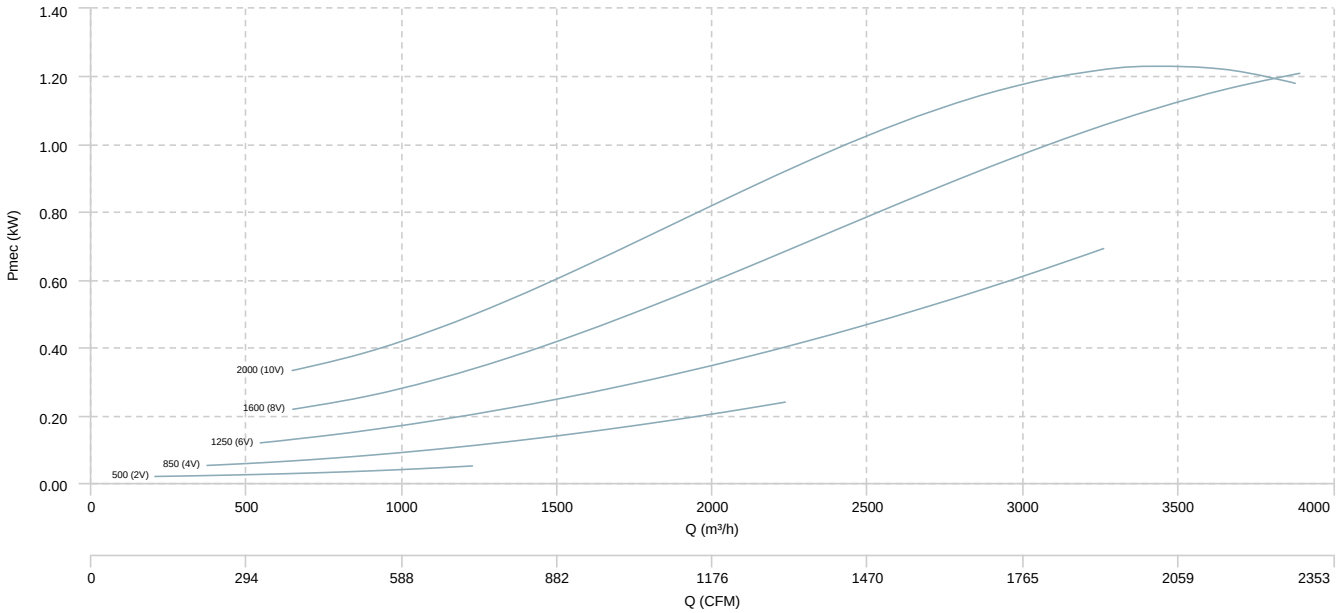


BD 9/7 EEC

## AIR FLOW - PRESSURE

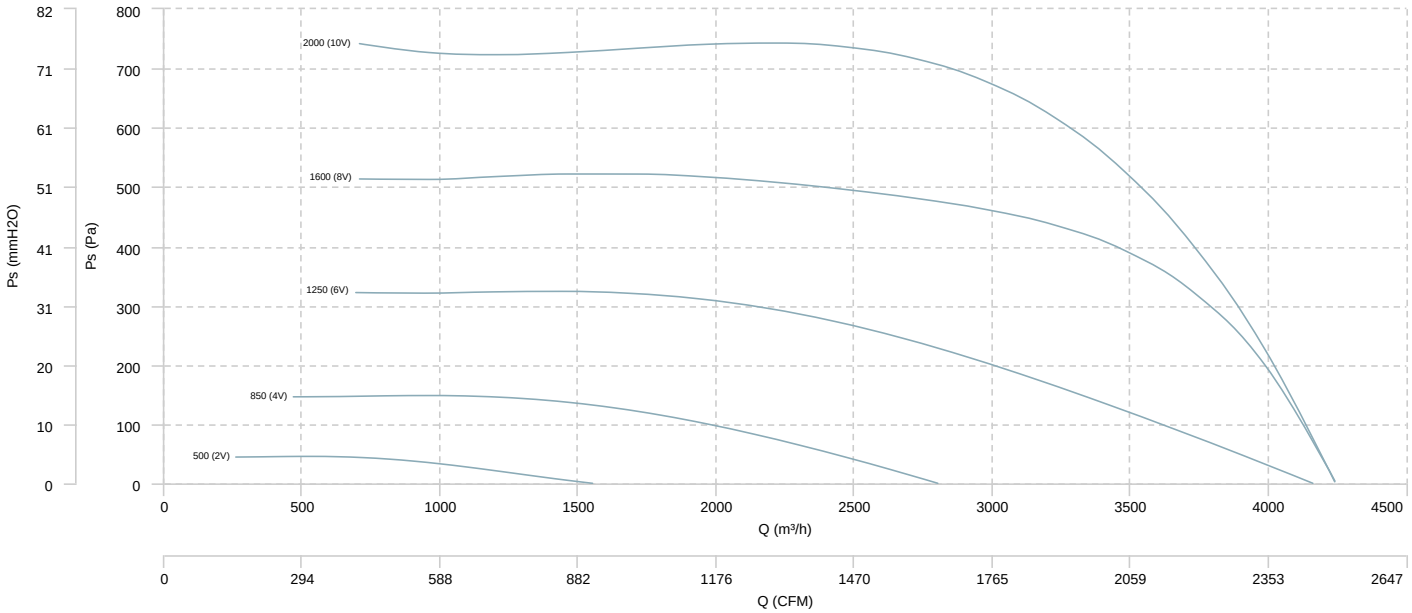



## AIR FLOW - MECHANICAL POWER

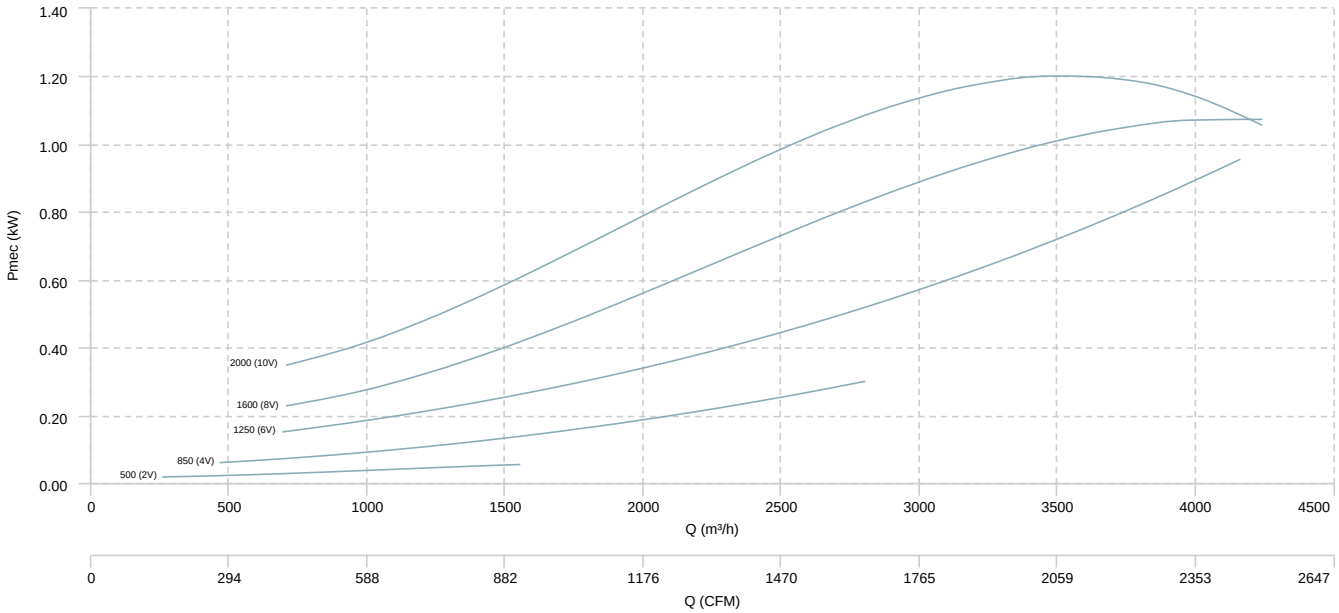


BD 9/9 EEC

## AIR FLOW - PRESSURE

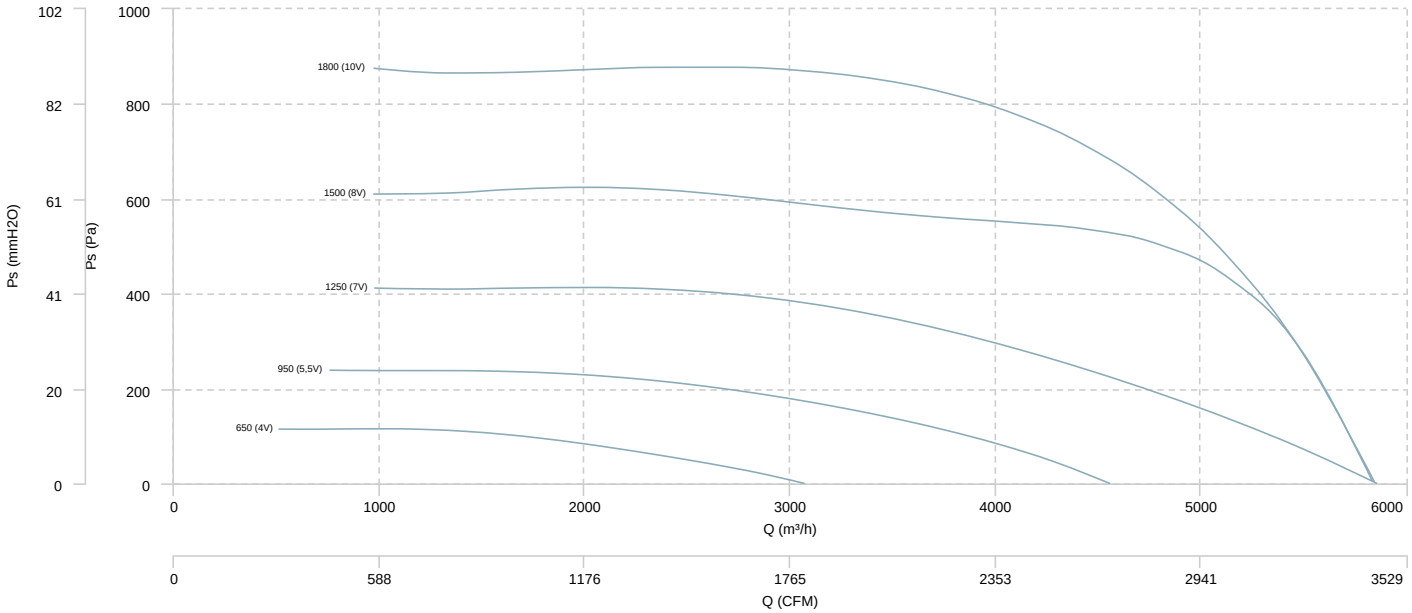



## AIR FLOW - MECHANICAL POWER

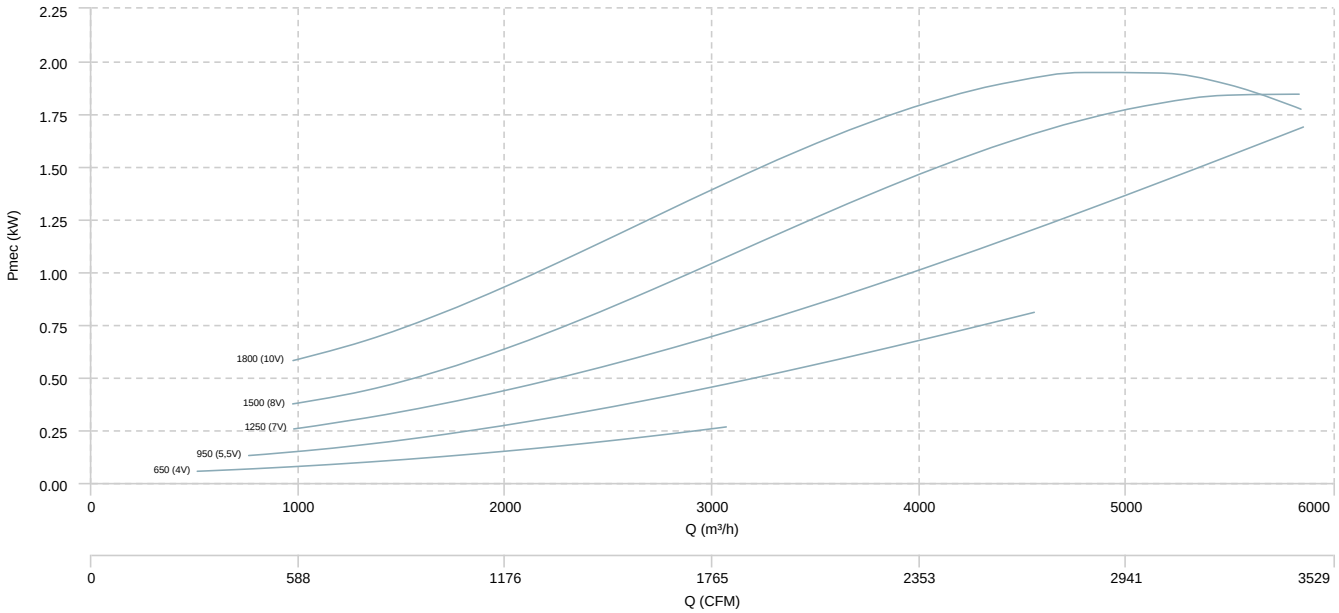


BD 10/8 EEC

## AIR FLOW - PRESSURE

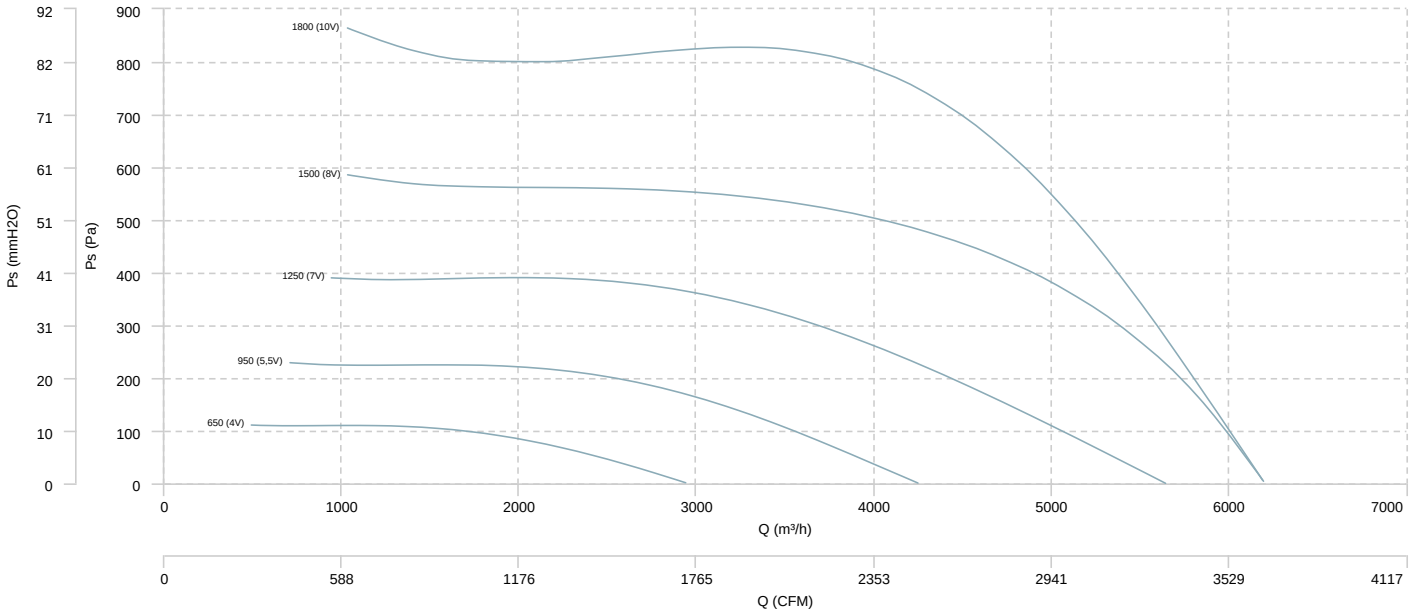



## AIR FLOW - MECHANICAL POWER

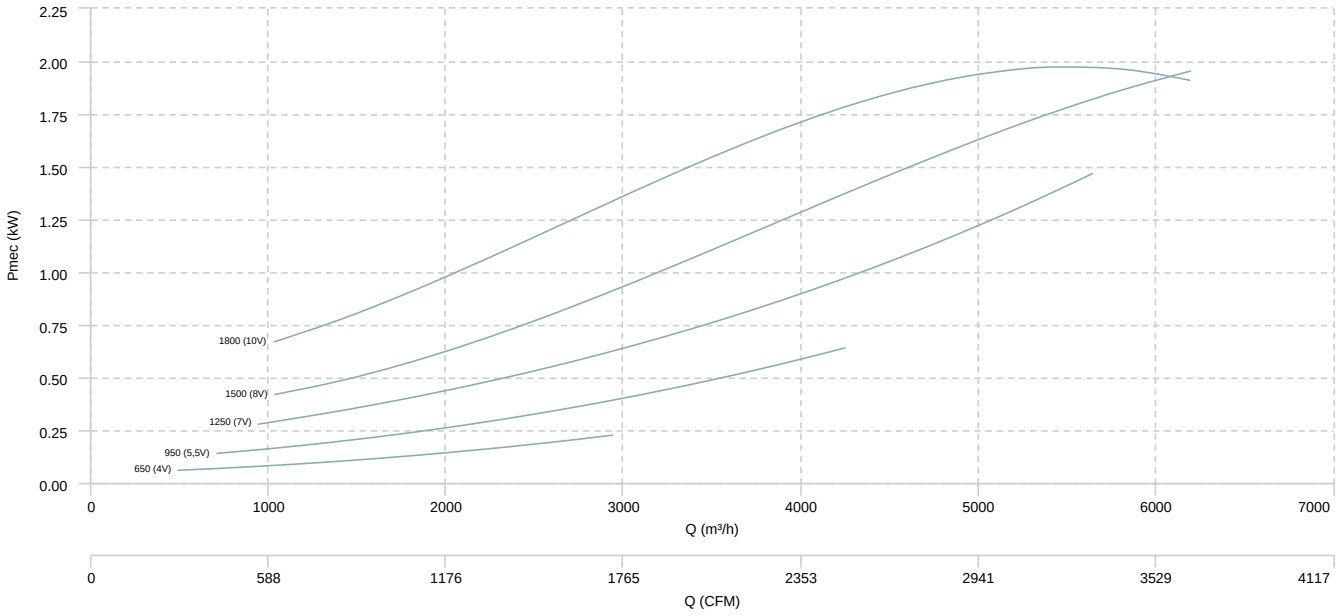


BD 10/10 EEC

## AIR FLOW - PRESSURE

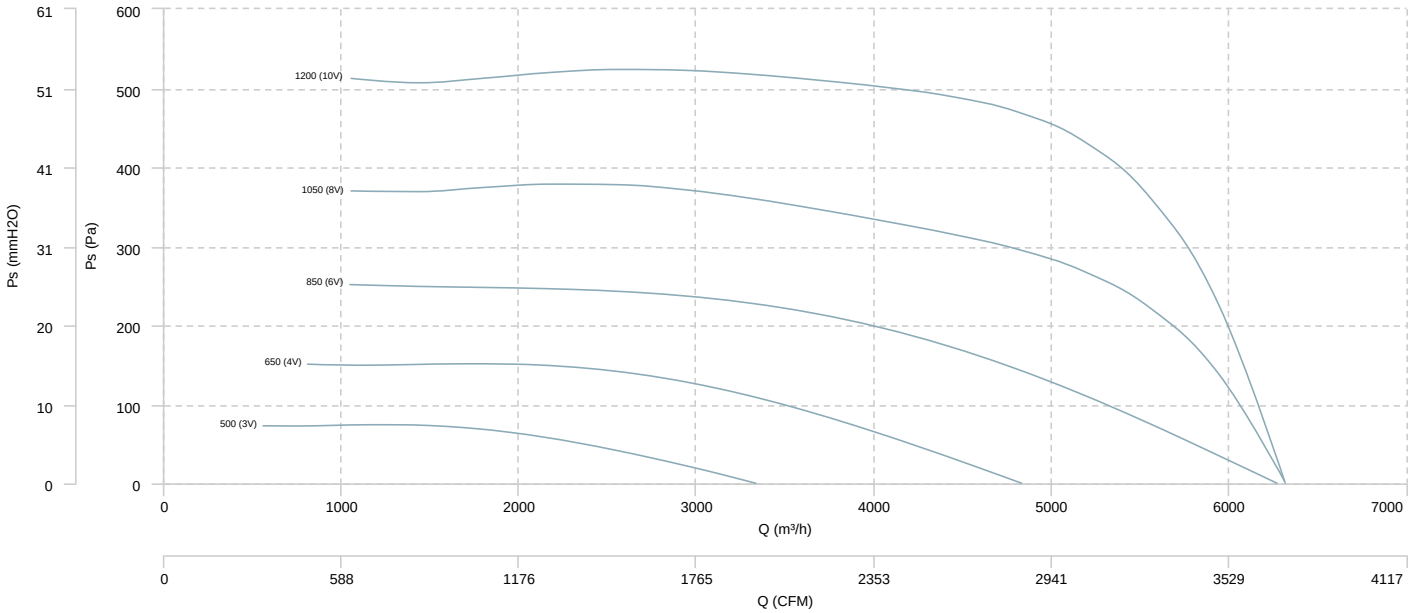



## AIR FLOW - MECHANICAL POWER

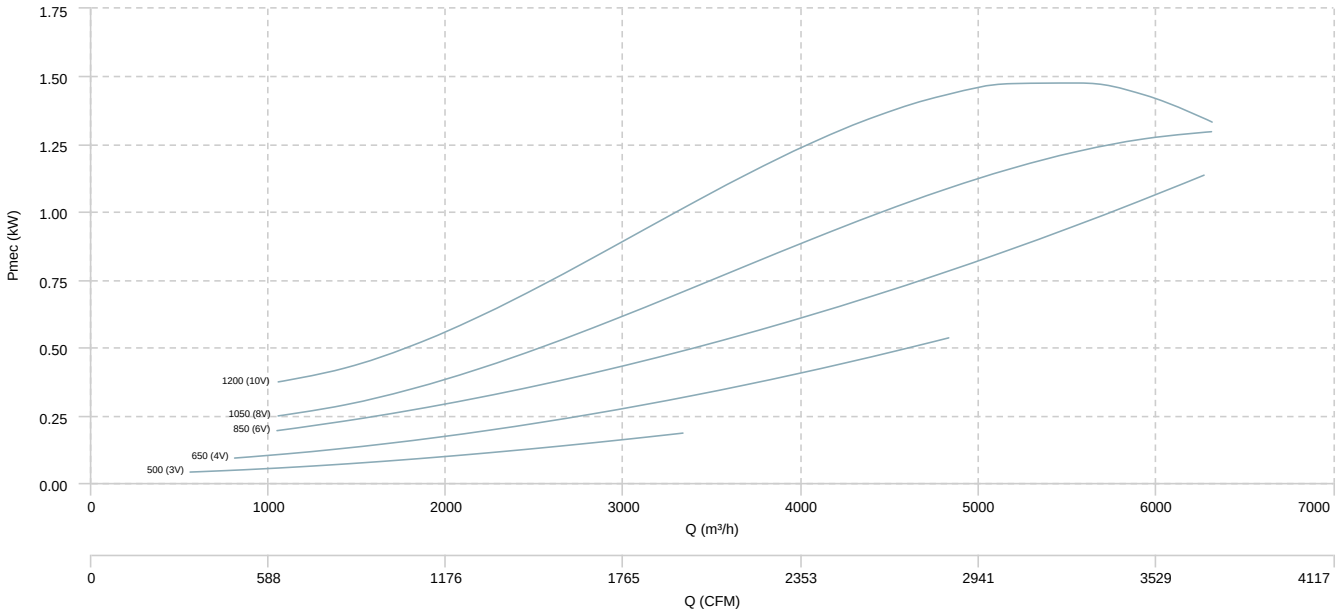


BD 12/9 EEC

## AIR FLOW - PRESSURE

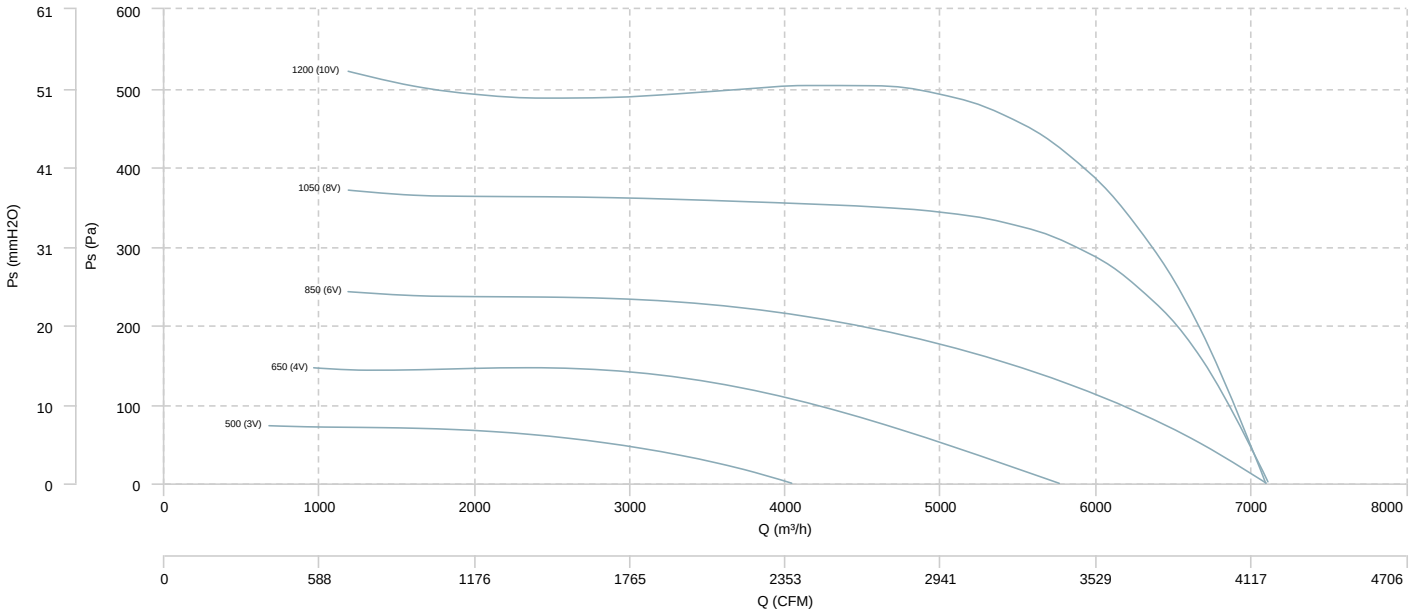



## AIR FLOW - MECHANICAL POWER

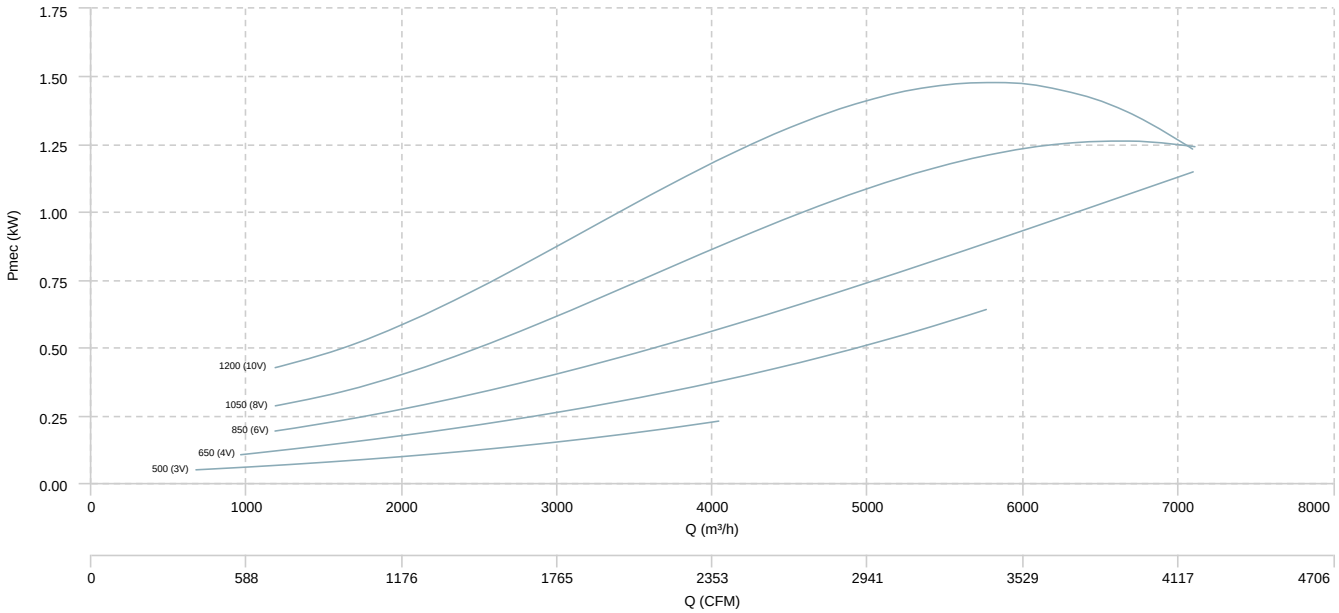


BD 12/12 EEC

## 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** |
| BD 7/7 EEC (500 (2V)) | Inlet | 22 | 28 | 28 | 29 | 31 | 29 | 26 | 21 | 37 |
| BD 9/7 EEC (500 (2V)) | Inlet | 30 | 36 | 36 | 37 | 39 | 38 | 34 | 29 | 45 |
| BD 9/9 EEC (500 (2V)) | Inlet | 27 | 33 | 33 | 34 | 36 | 34 | 31 | 26 | 42 |
| BD 10/8 EEC (650 (4V)) | Inlet | 41 | 47 | 46 | 48 | 50 | 48 | 45 | 40 | 55 |
| BD 10/10 EEC (650 (4V)) | Inlet | 42 | 48 | 48 | 49 | 51 | 49 | 46 | 41 | 57 |
| BD 12/9 EEC (500 (3V)) | Inlet | 38 | 44 | 44 | 45 | 47 | 45 | 42 | 37 | 53 |
| BD 12/12 EEC (500 (3V)) | Inlet | 40 | 46 | 45 | 46 | 49 | 47 | 44 | 39 | 54 |

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

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

## erp data

| ERP | |
|---|---|
| Fan type | Centrifugal fan radial or forward blades |
| Instalation cathegory | B |
| Efficency cathegory | Total |
| The fan has to be installed with FSC | No |

| | | Maximum efficiency point data | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | Motor power (kW) | Max. efficiency (%) | Efficiency grade (N) (N) | Air Flow (m³/h) | Pt (Pa) | Pabs (kW) | speed (rpm) | Specific ratio |
| BD 7/7 EEC | 0,37 | 45,50 | 57,44 | 980,55 | 217,80 | 0,13 | 1250 (6V) | 1,00 |
| BD 7/7 EEC | 0,37 | 47,86 | 57,91 | 1.215,65 | 357,38 | 0,26 | 1600 (8V) | 1,00 |
| BD 7/7 EEC | 0,37 | 49,38 | 58,09 | 1.421,52 | 513,30 | 0,42 | 2000 (10V) | 1,01 |
| BD 9/7 EEC | 0,75 | 54,98 | 65,41 | 1.364,37 | 326,32 | 0,22 | 1250 (6V) | 1,00 |
| BD 9/7 EEC | 0,75 | 57,14 | 65,24 | 1.807,42 | 576,59 | 0,52 | 1600 (8V) | 1,01 |
| BD 9/7 EEC | 0,75 | 56,49 | 63,37 | 1.995,13 | 799,88 | 0,82 | 2000 (10V) | 1,01 |
| BD 9/9 EEC | 0,75 | 56,47 | 66,28 | 1.671,32 | 342,20 | 0,28 | 1250 (6V) | 1,00 |
| BD 9/9 EEC | 0,75 | 58,15 | 65,79 | 2.174,21 | 545,53 | 0,62 | 1600 (8V) | 1,01 |
| BD 9/9 EEC | 0,75 | 59,30 | 65,84 | 2.340,28 | 782,65 | 0,93 | 2000 (10V) | 1,01 |
| BD 10/8 EEC | 1,50 | 54,07 | 64,02 | 1.961,37 | 259,90 | 0,27 | 950 (5, 5V) | 1,00 |
| BD 10/8 EEC | 1,50 | 57,32 | 65,33 | 2.432,45 | 454,40 | 0,54 | 1250 (7V) | 1,00 |
| BD 10/8 EEC | 1,50 | 58,71 | 64,77 | 3.145,60 | 662,93 | 1,11 | 1500 (8V) | 1,01 |
| BD 10/8 EEC | 1,50 | 60,76 | 65,90 | 3.340,55 | 944,61 | 1,54 | 1800 (10V) | 1,01 |
| BD 10/10 EEC | 1,50 | 51,40 | 61,40 | 2.009,84 | 241,34 | 0,26 | 950 (5, 5V) | 1,00 |
| BD 10/10 EEC | 1,50 | 54,17 | 62,27 | 2.460,90 | 415,79 | 0,52 | 1250 (7V) | 1,00 |
| BD 10/10 EEC | 1,50 | 56,29 | 62,71 | 3.105,89 | 598,41 | 0,97 | 1500 (8V) | 1,01 |
| BD 10/10 EEC | 1,50 | 57,19 | 62,29 | 3.564,11 | 885,91 | 1,57 | 1800 (10V) | 1,01 |
| BD 12/9 EEC | 1,50 | 54,21 | 65,20 | 2.117,61 | 167,97 | 0,18 | 650 (4V) | 1,00 |
| BD 12/9 EEC | 1,50 | 54,15 | 63,02 | 2.762,35 | 271,42 | 0,40 | 850 (6V) | 1,00 |
| BD 12/9 EEC | 1,50 | 57,72 | 65,24 | 3.114,24 | 406,42 | 0,65 | 1050 (8V) | 1,00 |
| BD 12/9 EEC | 1,50 | 57,32 | 63,31 | 3.670,75 | 565,66 | 1,13 | 1200 (10V) | 1,01 |
| BD 12/12 EEC | 1,50 | 52,24 | 62,68 | 2.594,50 | 162,42 | 0,22 | 650 (4V) | 1,00 |
| BD 12/12 EEC | 1,50 | 54,12 | 62,78 | 3.177,51 | 256,53 | 0,43 | 850 (6V) | 1,00 |
| BD 12/12 EEC | 1,50 | 57,16 | 63,85 | 4.051,83 | 395,46 | 0,88 | 1050 (8V) | 1,00 |

| | | Maximum efficiency point data | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Model** | **Motor power (kW)** | **Max. efficiency (%)** | **Efficiency grade (N) (N)** | **Air Flow (m³/h)** | **Pt (Pa)** | **Pabs (kW)** | **speed (rpm)** | **Specific ratio** |
| BD 12/12 EEC | 1,50 | 57,55 | 63,21 | 4.360,88 | 551,91 | 1,28 | 1200 (10V) | 1,01 |