

BDB

200/225/250/280

DOUBLE INLET CENTRIFUGAL FAN

With Backward Curved Wheels



BDB

➤ 200/225/250/280

DOUBLE INLET CENTRIFUGAL FAN with Backward Wheels



◀ Kruger* certifies that the model BDB 200 to BDB 280 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA publication 311 and comply with the requirements of the AMCA Certified Rating Program.



◀ *Kruger Ventilation Industries Asia Co., Ltd.



BDB Series BC Wheel



Direct coupling BDB Centrifugal Fan with AC Motor



Direct coupling BDB Centrifugal Fan with PM motor

BDB

➤ 200/225/250/280

Double Inlet Centrifugal Fans – Backward wheels

The BDB 200/225/250/280 are DIDW centrifugal fans equipped with high-efficiency, non-overloading backward-curved impellers. These fans are suitable for supply or exhaust applications in commercial, process, and industrial HVAC systems. The fan sizes comply with AMCA Standard 99, Section 5, R20.

Type / Operating Limits

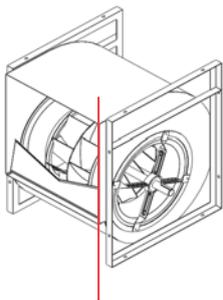
The operating limits of BDB 200/225/250/280 are set according to the requirement of Class I, II, and III, as defined in AMCA Standard 99, Section 14, Figure 1.

The BDB 200/225/250/280 are available in type C & T structure as per below:

BDB 200/225 – Class I only (type C only)

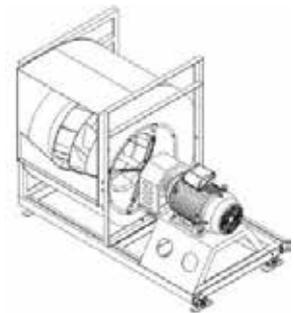
BDB 250/280 – Class I and II (type C and T)

Type / Structure



Type C

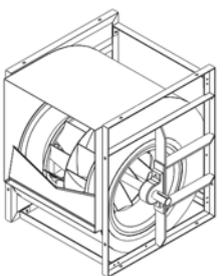
This type has a frame fitted on both sides of the fan which gives Better strength and rigidity. It allows mounting in four different orientations.



Fan Size: 200 - 280

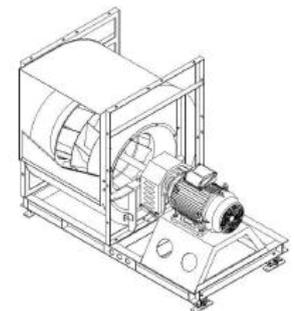
Volume: 1700 - 7000 m3/h

Total Pressure: up to 1500 Pa



Type T

This type has a welded frame giving increased stiffness and rigidity for higher operating performance.



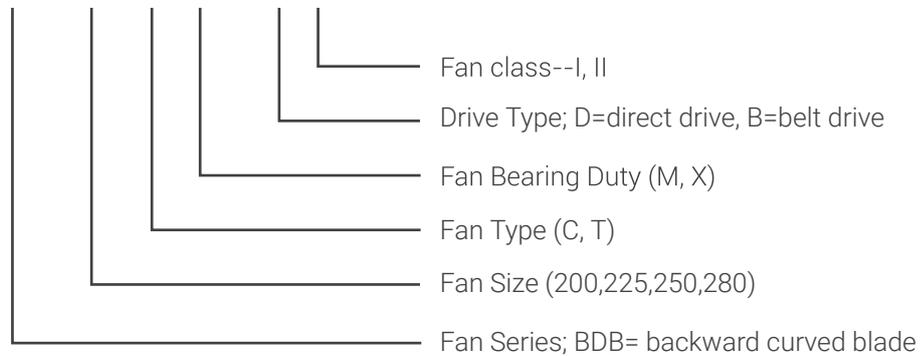
Fan Size: 200 - 280

Volume: 1700 - 10000 m3/h

Total Pressure: up to 2500 Pa

Nomenclature

MODEL: **BDB 200 C M / D I**



Technical Specification

Wheel

The wheel of BDB 200-290 is made of hot rolled sheet steel backward curved blades with polyester powder coating finish.

Housing

The housing is manufactured in galvanized sheet steel with the housing fixed to the sides plates in "pittsburg lock" form system. Fully welded steel plate housings with painted finish are available for all sizes upon request.

Frame

The frame is manufactured with galvanized angular bars for type "C". For type "T" and "X", they are manufactured with sections of steel with polyester powder coating finish.

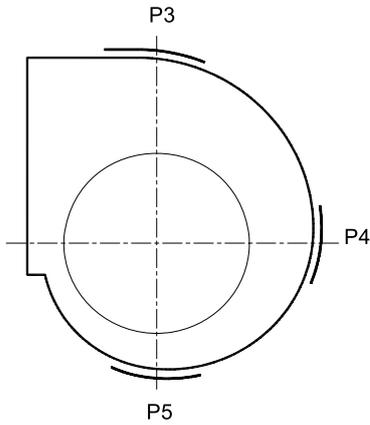
Shaft

Shafts are manufactured from C45 carbon steel using an automatic process for positioning and cutting of the keyways. All dimensional tolerances of the shaft are fully checked to ensure a precise fit. All shafts are then coated with an anti-corrosion varnish after assembly

Balancing Quality

All wheels are statically and dynamically balanced to ISO 1940 and AMCA 204-G2.5 Standard. All fans after assembly are also trim-balanced to ISO 1940 and AMCA 204-G2.5 Standard. Other standards other than G2.5 is available upon request.

Accessories



Casing Drain

This option is available when fans are exposed to the atmosphere or operating in high humidity condition.

Outlet Flanges

Outlet flanges are available upon request.

Inspection Doors

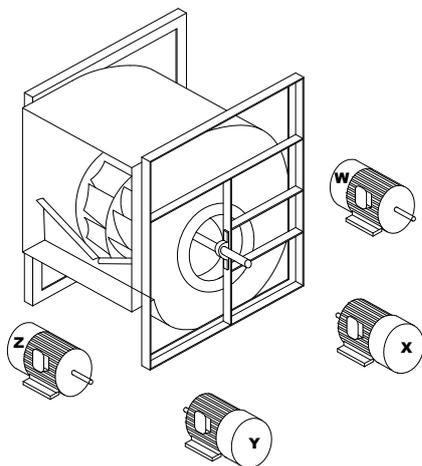
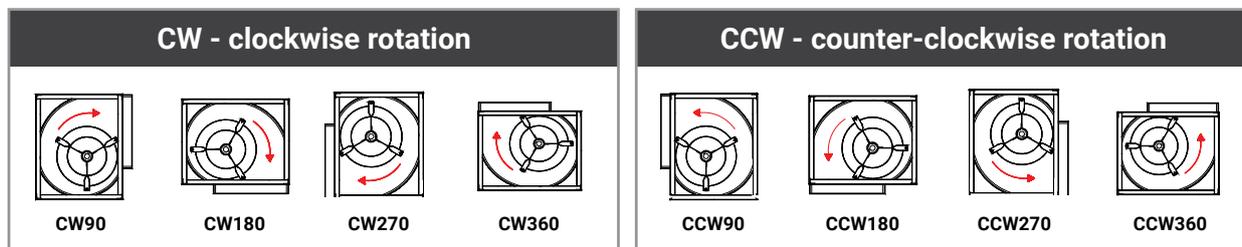
The inspection door can be supplied upon request. It can be supplied in one of the three positions (P3, P4 & P5).

Guards

Inlet guards, discharge guards and non-drive end shaft guards are available on request.

Fan Rotation and Discharge

The rotation and discharge of the fan is in accordance with AMCA standard 99, section 11
The direction of rotation is determined from the drive side of the fan:



Motor Position

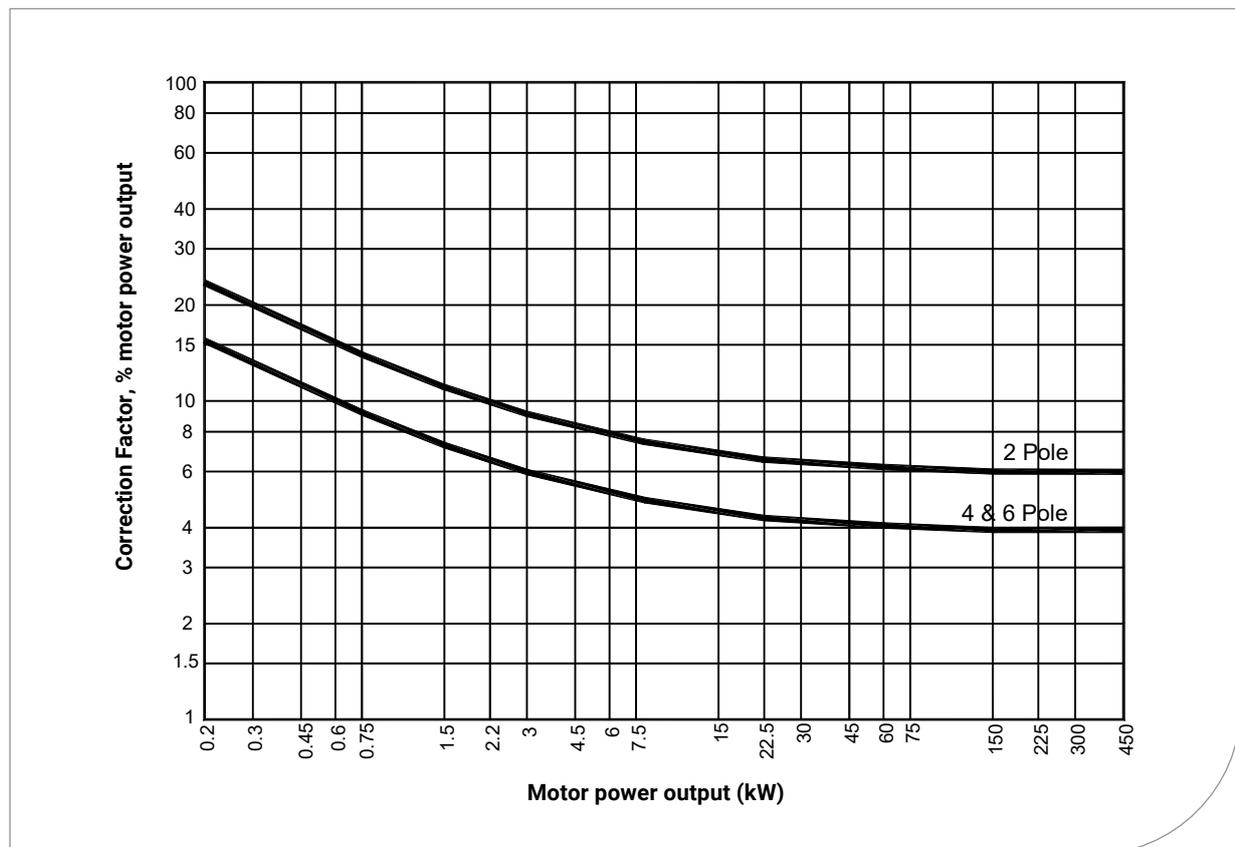
The position of the motor for belt drive centrifugal fan is in accordance with AMCA standard 99, section 12

Location of motor is determined by facing the drive side of fan and designated by letters W, X, Y, or Z.

Motor Selection

The power curves shown on each performance graph represents the absorbed power at the shaft of the fan measured in kW.

To determine the power of the motor to be installed, a correction factor should be applied to compensate for the transmission loss.



Dynamic Pressure

Both dynamic pressure and outlet air velocity values shown in each graph are calculated base on the full discharge area, i.e. ducted outlet area.

With free outlet condition, the velocity pressure is higher. To determine the new value, multiply the velocity pressure of the ducted outlet obtained from the fan curve by the following correction factor "K" equal to 1.67.

Fan performance calculated with this correction factor is not licensed by AMCA.

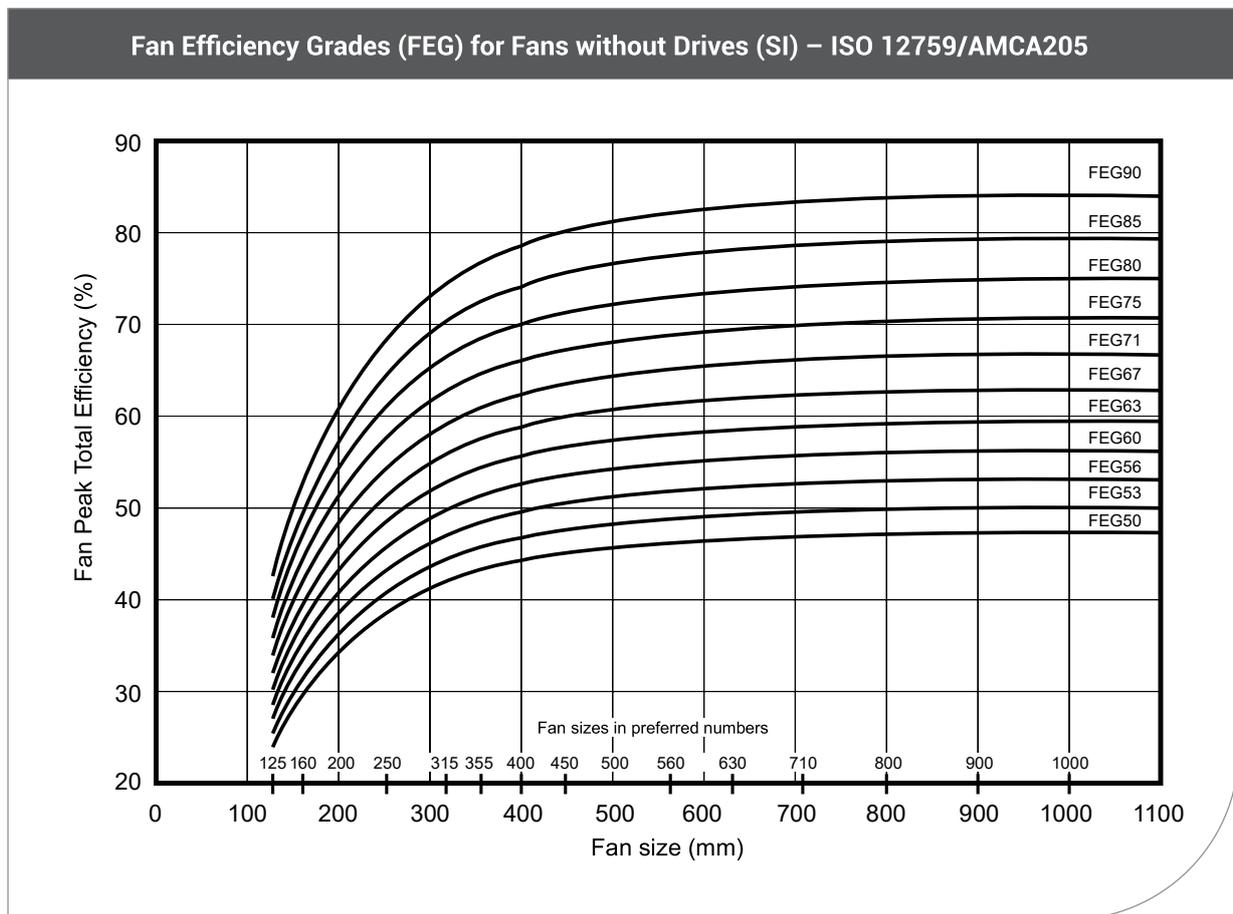
Performance Data

The performance data shown on each diagram is derived from tests conducted in accordance with AMCA Standard 210 Fig 12 installation Type B (ducted outlet and free inlet)

Ratings refer to standard air density with the total pressure as a function of the air volume, using logarithmic scale.

It is essential that, the same installation type and test standards are always used, when comparing fan performance.

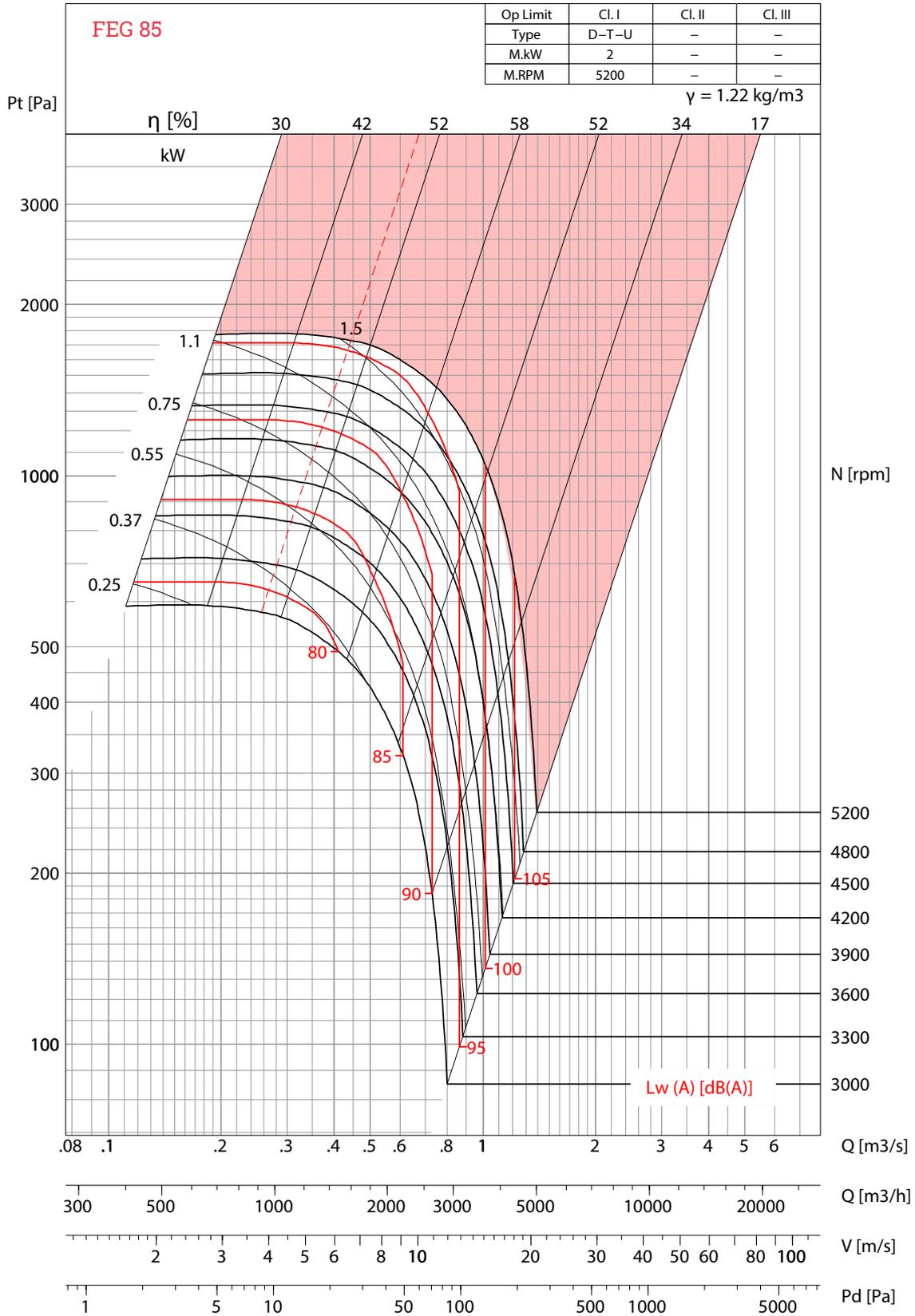
The fan FEG is classified in accordance with ISO 12759/AMCA 205.



Notes:

1. Fan size is the impeller diameter in mm.
2. The fan peak efficiency shall be calculated from the fan total pressure.
3. If this method is used for a direct driven fan, the fan efficiency is the impeller efficiency.
4. The FEG label for a given fan size is assigned when the fan peak efficiency is equal or lower than the efficiency at the grade upper limit and higher than efficiency at the grade upper limit of the next lower grade for the fan size.
5. For any fan sizes larger than 1016 mm, the values of the grade upper limits are the same as for a size of 1016 mm.
6. No labels are considered for the fans with the fan peak total efficiency below FEG50.
7. The values of efficiencies are calculated for fan sizes in the preferred R40 Series.
8. Not all fan sizes in preferred numbers shown.

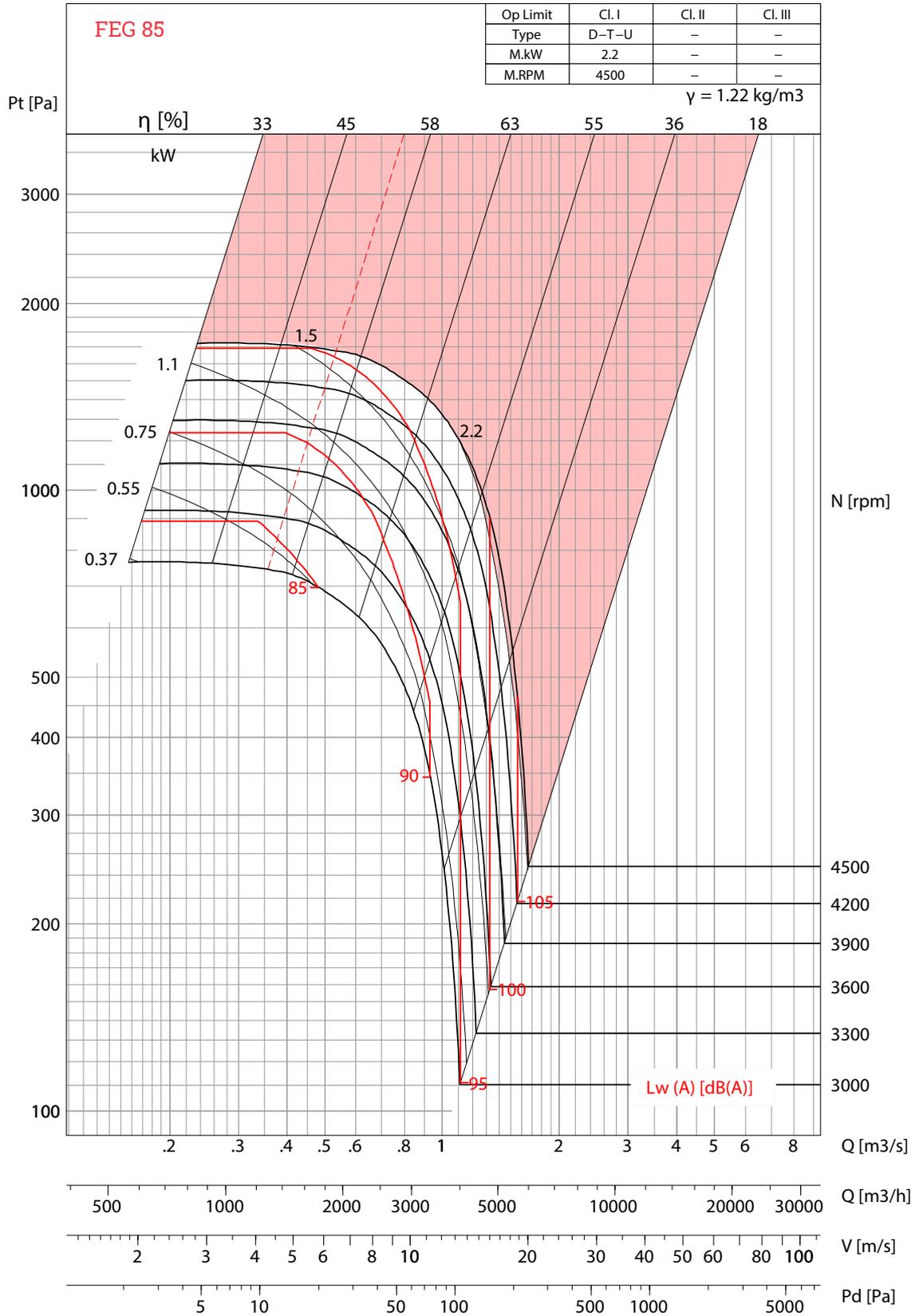
BDB 200



Performance certified is for installation type B – free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating (kW) does not include transmission losses.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for the inlet LwiA sound power levels for installation type B – free inlet, ducted outlet.

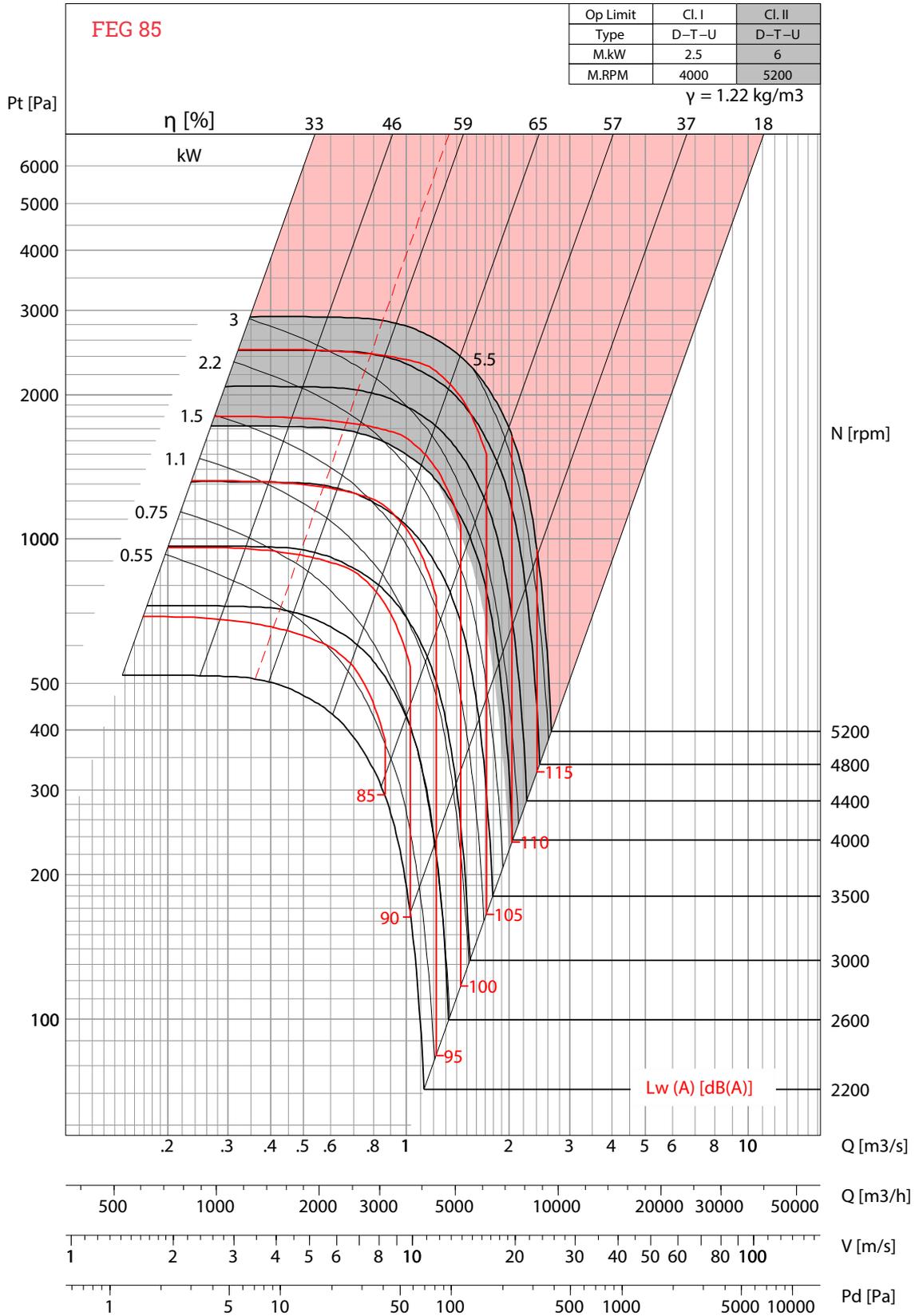
BDB 225



Performance certified is for installation type B – free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating (kW) does not include transmission losses.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for the inlet LwiA sound power levels for installation type B – free inlet, ducted outlet.

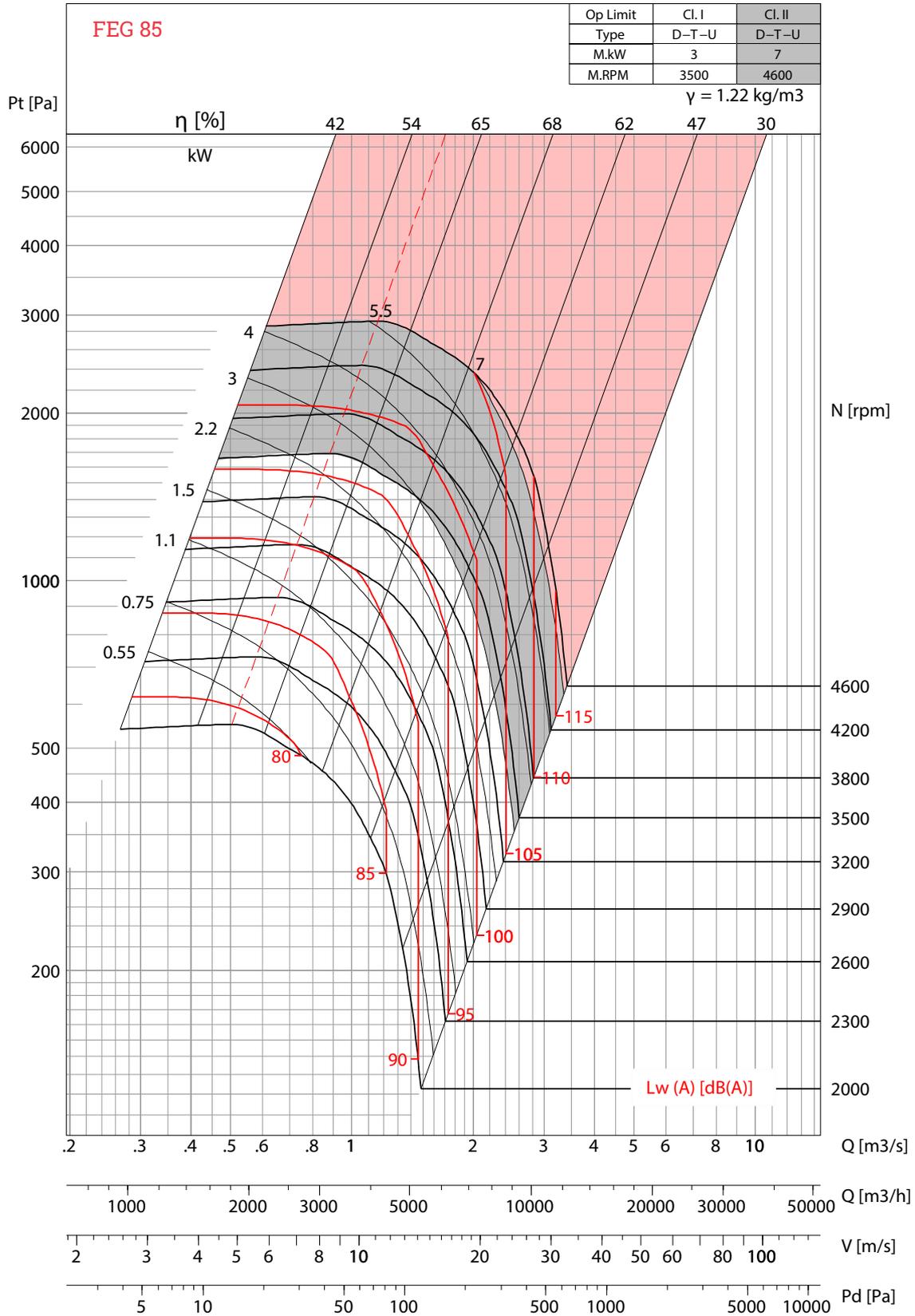
BDB 250



Performance certified is for installation type B – free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating (kW) does not include transmission losses.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for the inlet Lw(A) sound power levels for installation type B – free inlet, ducted outlet.

BDB 280

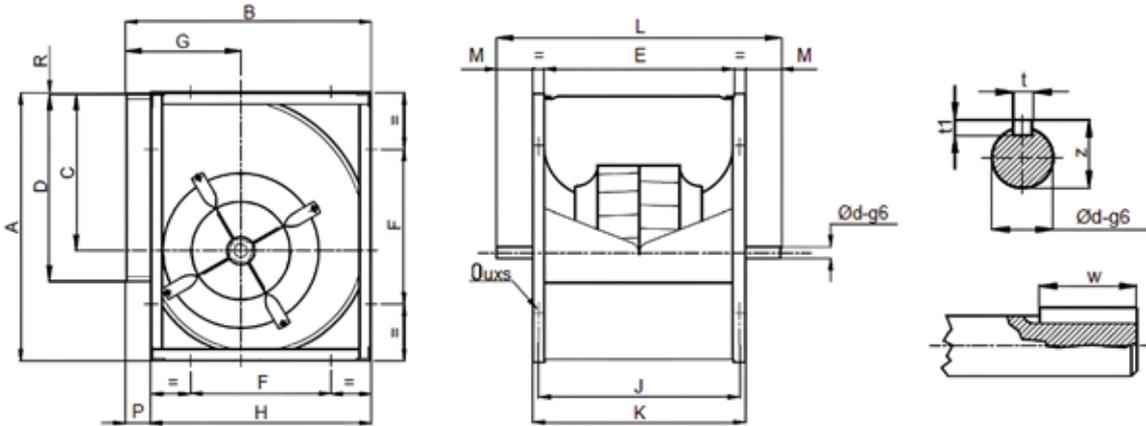


Performance certified is for installation type B – free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances (accessories). Power rating (kW) does not include transmission losses.

The A-weighted sound ratings shown have been calculated per AMCA International Standard 301. Values shown are for the inlet LwiA sound power levels for installation type B – free inlet, ducted outlet.

Dimensions

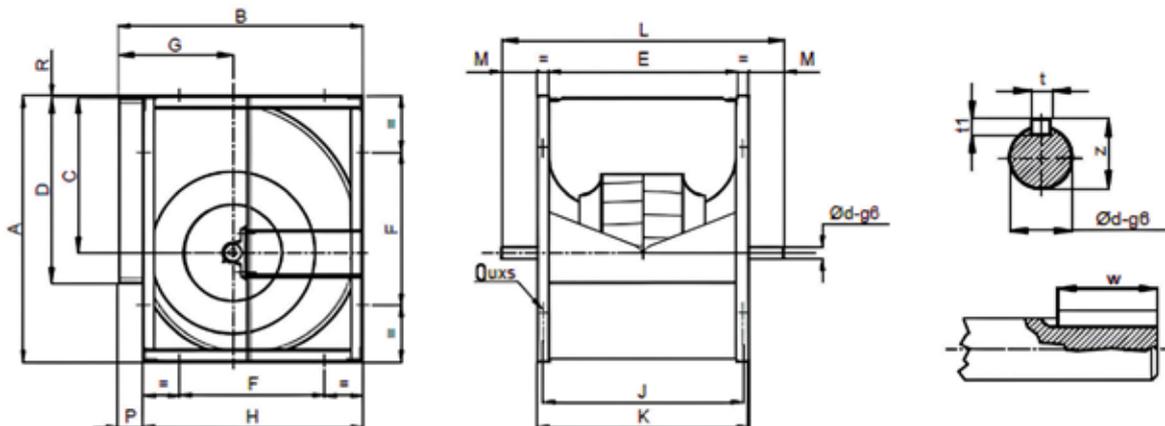
BDB 200-280 'C'



| Model | A | B | C | D | E | F | G | H | J | K | L | M | P | R | t | t1 | w | z | Ø d | | UXS |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|---|----|----|------|-----|----|-------|
| | | | | | | | | | | | | | | | | | | | CL | CM | |
| 200 | 370 | 343 | 215 | 256 | 256 | 224 | 164 | 306 | 281 | 306 | 420 | 57 | 37 | 4 | 6 | 6 | 30 | 22.5 | 20 | 20 | 11x16 |
| 225 | 415 | 382 | 243 | 288 | 288 | 224 | 180 | 348 | 313 | 338 | 452 | 57 | 34 | 3 | 6 | 6 | 30 | 22.5 | 20 | 20 | 11x16 |
| 250 | 460 | 418 | 270 | 322 | 322 | 224 | 194 | 383 | 347 | 372 | 486 | 57 | 35 | 4 | 6 | 6 | 30 | 22.5 | 20 | 20 | 11x16 |
| 280 | 518 | 466 | 302 | 360 | 360 | 280 | 214 | 432 | 390 | 420 | 556 | 68 | 34 | 5 | 8 | 7 | 40 | 28 | 25 | 25 | 13x18 |

All dimension in mm.

BDB 200-280 'T'



| Model | A | B | C | D | E | F | G | H | J | K | L | M | P | R | t | t1 | w | z | Ø d | | UXS |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|---|----|----|----|-----|----|-------|
| | | | | | | | | | | | | | | | | | | | TL | TM | |
| 250 | 460 | 418 | 270 | 322 | 322 | 224 | 194 | 383 | 347 | 372 | 538 | 83 | 35 | 4 | 8 | 7 | 40 | 28 | 25 | 25 | 11x16 |
| 280 | 518 | 466 | 302 | 360 | 360 | 280 | 214 | 432 | 390 | 420 | 588 | 84 | 34 | 5 | 8 | 7 | 40 | 33 | 30 | 30 | 13x18 |

All dimension in mm.

Operational Limits

BDB 200-280

| | | | 200 | 225 | 250 | 280 |
|--------------------------------------|-------------|------------------|------|------|------|------|
| Maximum Absorbed Power | CL. I | kW | 2 | 2.2 | 2.5 | 3 |
| | CL. II | kW | NA | NA | 6 | 7 |
| | CL. III | kW | NA | NA | NA | NA |
| Maximum Fan Speed | CL. I | rpm | 5200 | 4500 | 4000 | 3500 |
| | CL. II | rpm | 5000 | NA | 4800 | 4600 |
| | CL. III | rpm | NA | NA | NA | NA |
| Temperature Range/Min. -20° C | All Classes | Max ° C | 55 | 55 | 55 | 55 |
| Wheel | Diameter | mm | 200 | 225 | 250 | 280 |
| | $J=PD^2/4$ | kgm ² | 0.02 | 0.03 | 0.06 | 0.1 |
| Weight | CL. I | kg | 16 | 18 | 20 | 24 |
| | CL. II | kg | NA | NA | 26 | 34 |
| | CL. III | kg | NA | NA | NA | NA |

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CNo. - CAT079.EDO December 2025

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