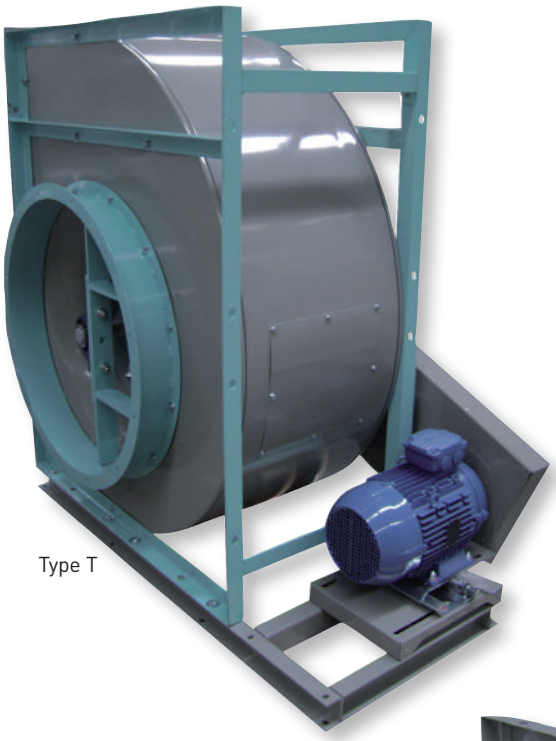
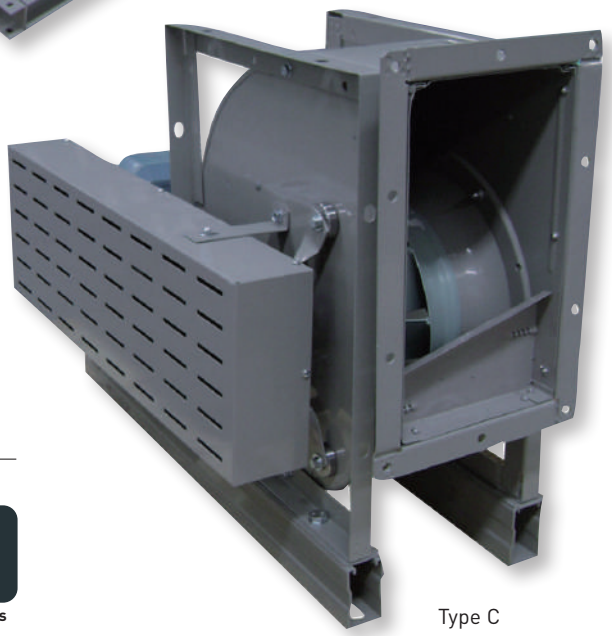


Type T



Type C

Range of belt driven single inlet centrifugal fans, designed for emergency smoke extraction in fire conditions and certified F400-120. The fans are also suitable for supply or exhaust applications in commercial and industrial buildings.
Sizes of this series are in accordance with AMCA standard 99-0098-76 and DIN323R20.

**Operating limit**
Each fan type has its maximum operating speed and power due to its mechanical design. The operating limit of BSP series is adjusted to meet the requirement of class I limit as defined in AMCA standard 99-2408-69.

**Motor**
Foot-mounted motor (B3), IP55, Class F insulation.
Electrical supplies:
- Three phase 220-240/380-415-50/60* Hz up to 3 kW.
  (*Check Easyvent for 60Hz available models)
- Three phase 380-415V-50Hz, for higher power motors and two speed motors.

1 speed motor are speed controllable by inverter.

**Wheel**
The wheel of BSP series has backward curved blades manufactured in cold rolled sheet steel with polyester powder coating finish.

**Housing**
For all sizes, the housing is manufactured in galvanized sheet steel with the housing fixed to the side plates in "pittsburg lock" form system.

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

**Type C (models from 315 to 630)**
This type has a frame fitted on both sides of the fan which gives better strength and rigidity. It allows mounting in three different orientations, either CW or CCW rotation.

**Type T (models from 710 to 1000)**
This type has a welded frame giving increased stiffness and rigidity required for higher operating performance, either CW or CCW rotation.

**On request**
Inspection door (IP) and drain hole (CD).
Epoxy paint.
2 speed motors.

**Specific applications**

F400-120 — Approved to EN12101-3 standard 0370-CPR-1152

100ºC — Continuous

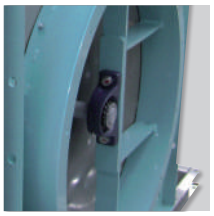
P — Car parks

Industrial and commercial kitchens

Ex — Versions

**Deep groove ball bearing type for medium duty**

Assembly type C



Assembly type T

**ATEX versions BSP**
On request, explosion proof versions for BSP, in accordance with ATEX Directive for three phase models:

- ATEX Flameproof - Gas
  - Ⓔx II 2G Ex d IIB T4
  - Ⓔx II 2G Ex d IIB(H2) T4
  (with Ex d IIC T4 motor)
- ATEX Increased safety - Gas
  - Ⓔx II 2G Ex e II T3
- ATEX - Dust

Suspended flammable particles and non-conductive dust:
- Ⓔx II 3D Ex tc IIIB T125ºC

Conductive dust:
- Ⓔx II 3D Ex tc IIIC T125ºC
  (with IP65 motor)

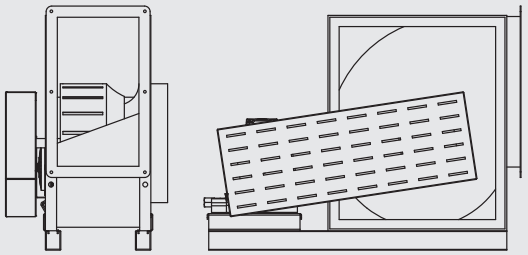
## TECHNICAL CHARACTERISTICS

Before making any electrical connection ensure that the voltage and frequency of the mains electrical supply matches that of the fan data place label.

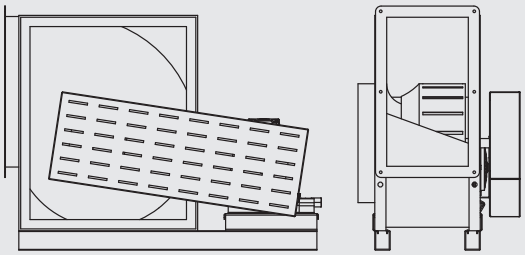
| Model | Minimum motor power (kW) | Maximum motor power (kW) | N. min (rpm) | N. max (rpm) | Maximum temperature in continuous operation (ºC) | Weight (kg) (With bigger motor) |
|---|---|---|---|---|---|---|
| 315 | 0,25 | 3 | 1400 | 3200 | 100 | 81 |
| 355 | 0,25 | 4 | 1200 | 2800 | 100 | 94 |
| 400 | 0,55 | 4 | 1300 | 2500 | 100 | 105 |
| 450 | 0,55 | 5,5 | 1000 | 2200 | 100 | 139 |
| 500 | 0,75 | 5,5 | 900 | 1950 | 100 | 157 |
| 560 | 0,75 | 7,5 | 800 | 1800 | 100 | 190 |
| 630 | 0,75 | 7,5 | 700 | 1500 | 100 | 222 |
| 710 | 1,1 | 11 | 600 | 1350 | 100 | 373 |
| 800 | 1,1 | 15 | 500 | 1200 | 100 | 448 |
| 900 | 1,5 | 15 | 500 | 1050 | 100 | 514 |
| 1000 | 3 | 18,5 | 500 | 950 | 100 | 624 |

## POSITIONS

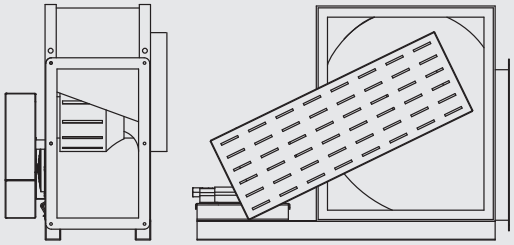
C W 90º - Z



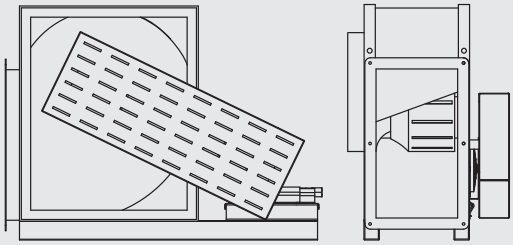
CC W 90º - W



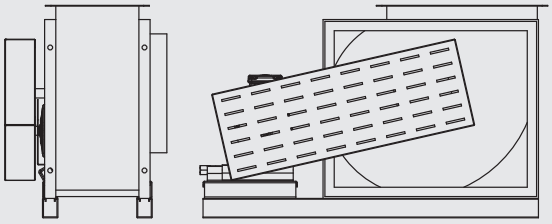
C CW 270º - Z



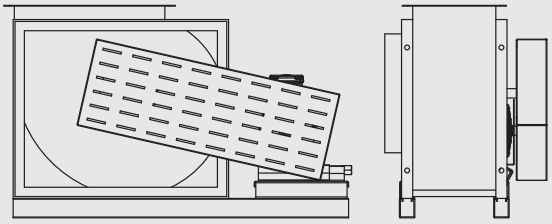
C W 270º - W



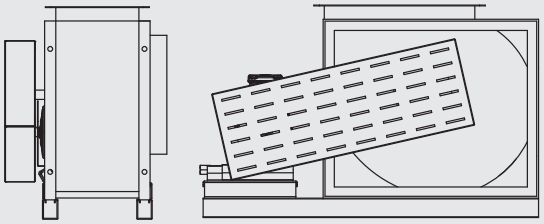
CCW 360º - Z



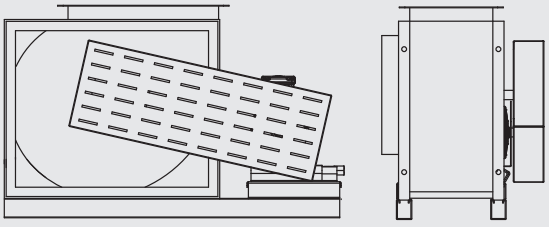
C W 360º - W



CW 360º - Z



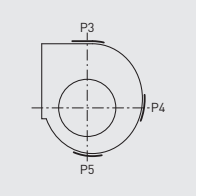
CC W 360º - W



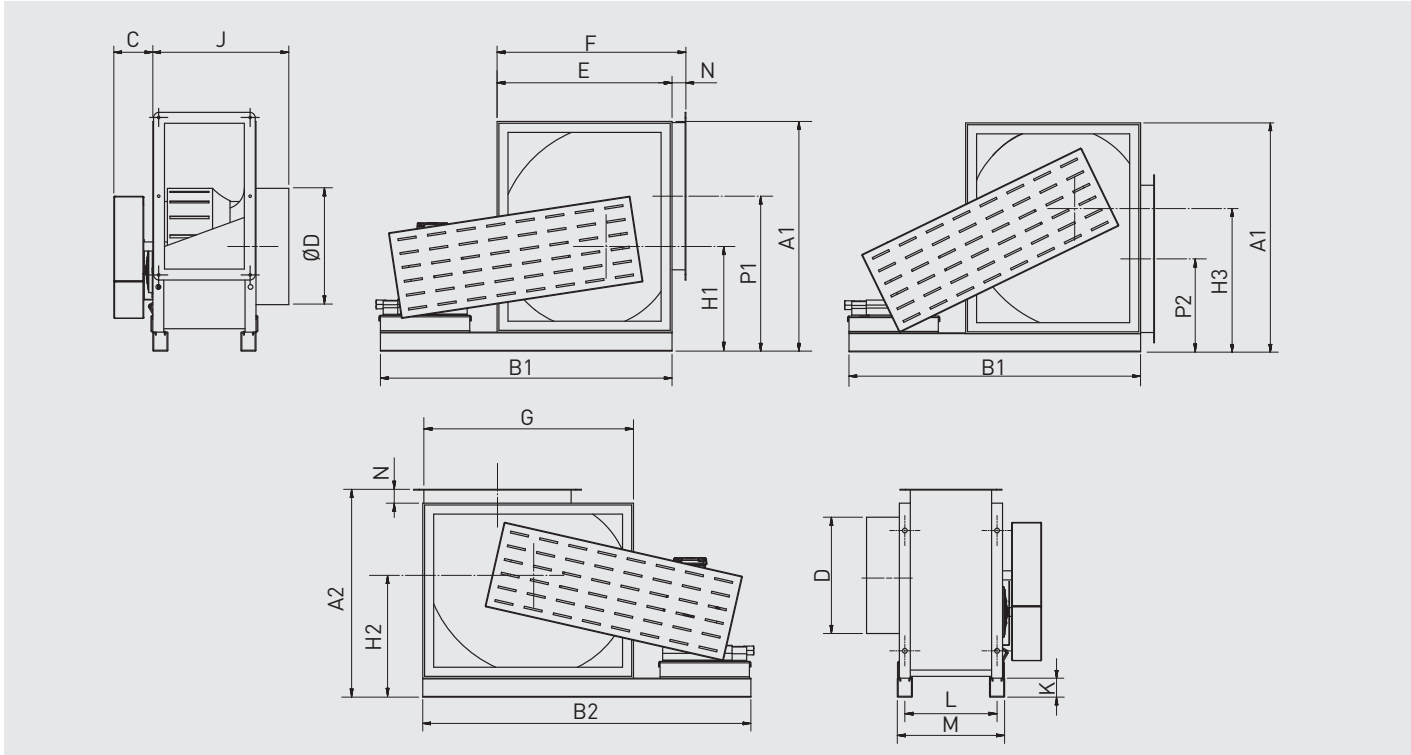
## REFERENCE

| B | S | P | / | 4 | 1000 | TM | 22 kW | 700 | 90 | CCW | F400 | 400/690V50 | W | ID P3 | + | CD P4 | EPOXI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | 13 | 14 |

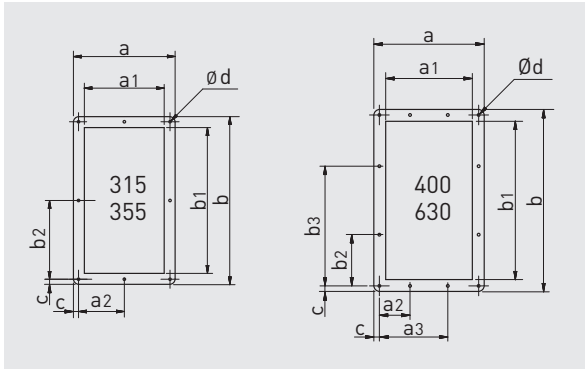
**1 - :** Serie
**2 - :** Number of poles (motor)
**3 - :** Impeller diameter (mm)
**4 - :** Fan type
**5 - :** Motor power (kW)
**6 - :** Fan speed (rpm)
**7 - :** Orientation (º)
**8 - :** Tipo rotación
**9 - :** Certificación
**10 - :** Electrical supply
**11 - :** Motor position (facing the drive side):
Z: Motor on left side.
W: Motor on right side
**12 - :** Inspection door position (IP: option)
**13 - :** Drain hole position (CD: option)
**14 - :** Painting (option)




## DIMENSIONS (mm)

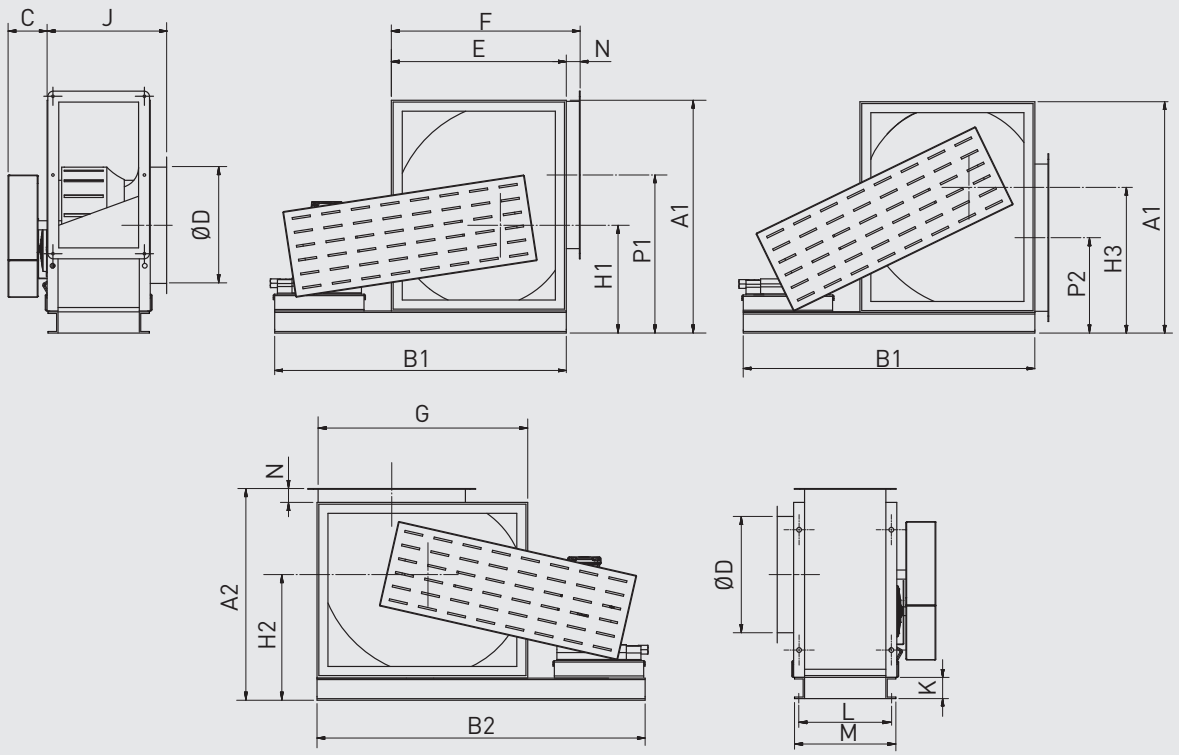



| Model | A1 | A2 | B1 | B2 | C min | C max | D | E | F | G | H1 | H2 | H3 | J | K | L | M | N | P1 | P2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (+/- 15 mm) | | | | | | | | | | | | | | | |
| 315 | 630 | 570 | 900 | 1000 | 120 | 200 | 315 | 480 | 518 | 578 | 287 | 334 | 343 | 373 | 52 | 253 | 283 | 38 | 431 | 257 |
| 355 | 706 | 630 | 1000 | 1100 | 120 | 200 | 355 | 548 | 578 | 654 | 317 | 370 | 389 | 407 | 52 | 287 | 327 | 30 | 486 | 284 |
| 400 | 788 | 702 | 1000 | 1100 | 120 | 200 | 400 | 612 | 650 | 736 | 351 | 412 | 437 | 434 | 52 | 314 | 354 | 38 | 540 | 310 |
| 450 | 879 | 778 | 1100 | 1200 | 120 | 200 | 450 | 681 | 726 | 827 | 388 | 456 | 491 | 468 | 52 | 348 | 388 | 45 | 600 | 341 |
| 500 | 970 | 852 | 1200 | 1300 | 120 | 200 | 500 | 750 | 800 | 918 | 427 | 500 | 543 | 505 | 52 | 385 | 425 | 50 | 656 | 376 |
| 560 | 1082 | 944 | 1300 | 1400 | 120 | 200 | 560 | 844 | 892 | 1030 | 472 | 554 | 610 | 553 | 52 | 433 | 483 | 48 | 732 | 416 |
| 630 | 1209 | 1050 | 1400 | 1600 | 120 | 200 | 630 | 945 | 998 | 1157 | 524 | 616 | 685 | 603 | 52 | 483 | 533 | 53 | 815 | 458 |

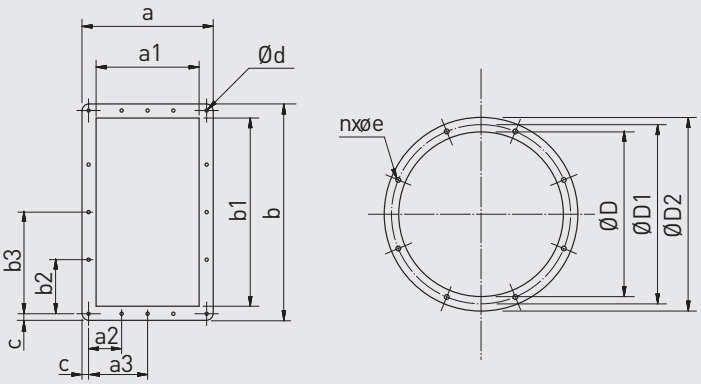



| Model | a | a1 | a2 | a3 | b | b1 | b2 | b3 | c | d |
|---|---|---|---|---|---|---|---|---|---|---|
| 315 | 279 | 221 | 127 | - | 460 | 404 | 217 | - | 13 | 9 |
| 355 | 303 | 245 | 139 | - | 508 | 452 | 241 | - | 13 | 9 |
| 400 | 333 | 272 | 91 | 216 | 562 | 506 | 168 | 368 | 13 | 9 |
| 450 | 364 | 306 | 108 | 230 | 624 | 568 | 199 | 399 | 13 | 9 |
| 500 | 401 | 343 | 113 | 262 | 694 | 638 | 209 | 459 | 13 | 9 |
| 560 | 439 | 381 | 132 | 281 | 770 | 714 | 247 | 497 | 13 | 9 |
| 630 | 489 | 431 | 143 | 320 | 856 | 800 | 265 | 565 | 13 | 9 |

**DIMENSIONS (mm)**




| Model | A1 | A2 | B1 | B2 | C min | C max | D | E | F | G | H1 | H2 | H3 | J | K | L | M | N | P1 | P2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (+/- 15 mm) | | | | | | | | | | | | | | | |
| 710 | 1382 | 1200 | 1600 | 1800 | 120 | 200 | 710 | 1057 | 1120 | 1302 | 610 | 716 | 772 | 649 | 80 | 529 | 579 | 63 | 940 | 536 |
| 800 | 1548 | 1334 | 1700 | 2000 | 120 | 200 | 800 | 1180 | 1254 | 1468 | 679 | 794 | 869 | 703 | 80 | 583 | 633 | 74 | 1052 | 590 |
| 900 | 1728 | 1488 | 1850 | 2150 | 120 | 200 | 900 | 1319 | 1408 | 1648 | 750 | 884 | 978 | 765 | 80 | 645 | 695 | 89 | 1170 | 652 |
| 1000 | 1890 | 1620 | 1950 | 2350 | 120 | 200 | 1000 | 1450 | 1540 | 1810 | 815 | 964 | 1075 | 833 | 80 | 713 | 763 | 90 | 1266 | 722 |

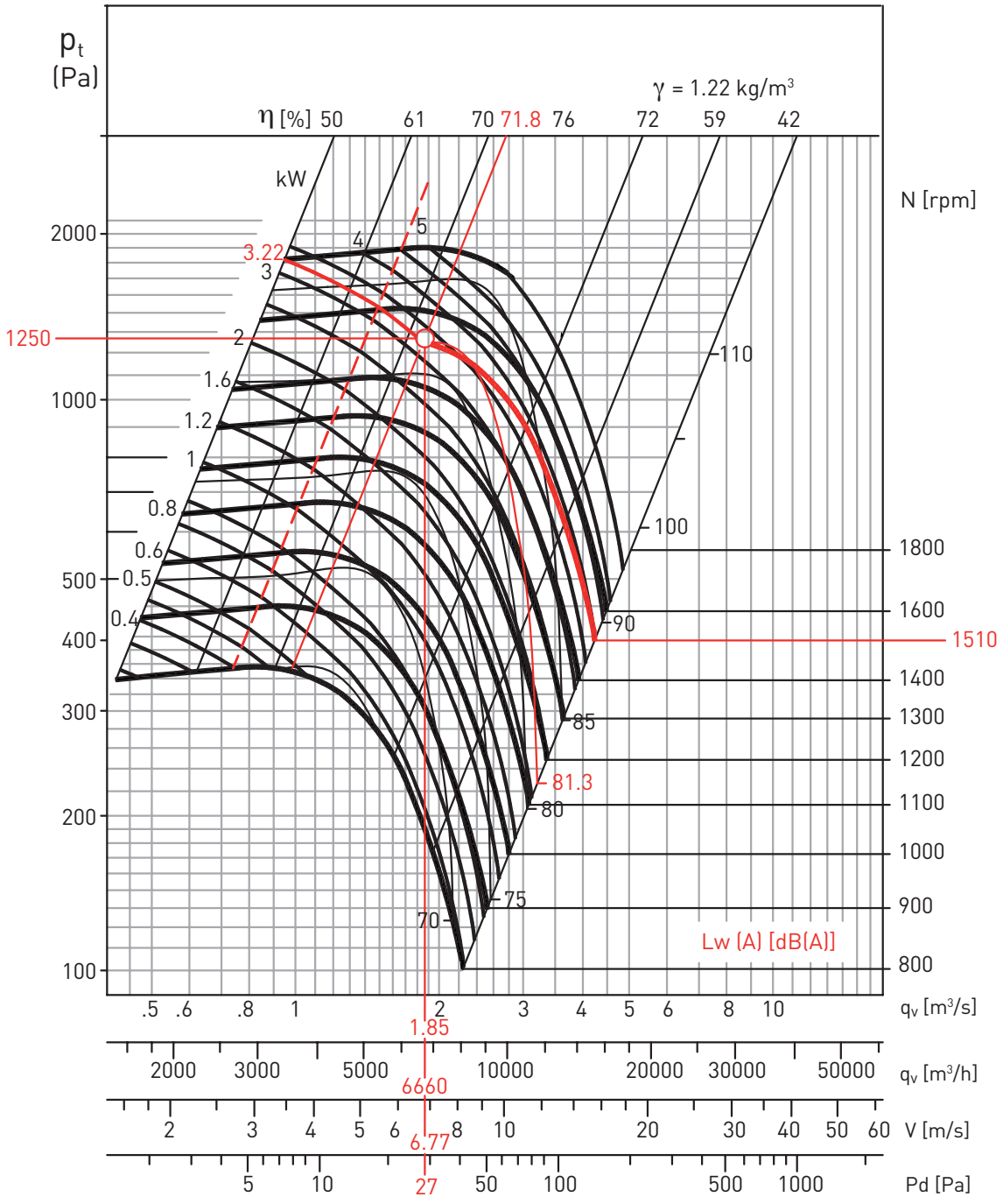



| Model | a | a1 | a2 | a3 | b | b1 | b2 | b3 | c | d | D | D1 | D2 | n x e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 710 | 535 | 477 | 141 | 255 | 954 | 898 | 264 | 464 | 13 | 9 | 710 | 751 | 796 | 8x10 |
| 800 | 589 | 531 | 142 | 282 | 1062 | 1006 | 268 | 518 | 13 | 9 | 800 | 837 | 886 | 12x12 |
| 900 | 651 | 593 | 147 | 313 | 1186 | 1130 | 280 | 580 | 13 | 9 | 900 | 934 | 986 | 12x12 |
| 1000 | 719 | 661 | 156 | 347 | 1322 | 1266 | 298 | 648 | 13 | 9 | 1000 | 1046 | 1086 | 12x12 |

## PERFORMANCE CURVES - EXAMPLE OF SELECTION

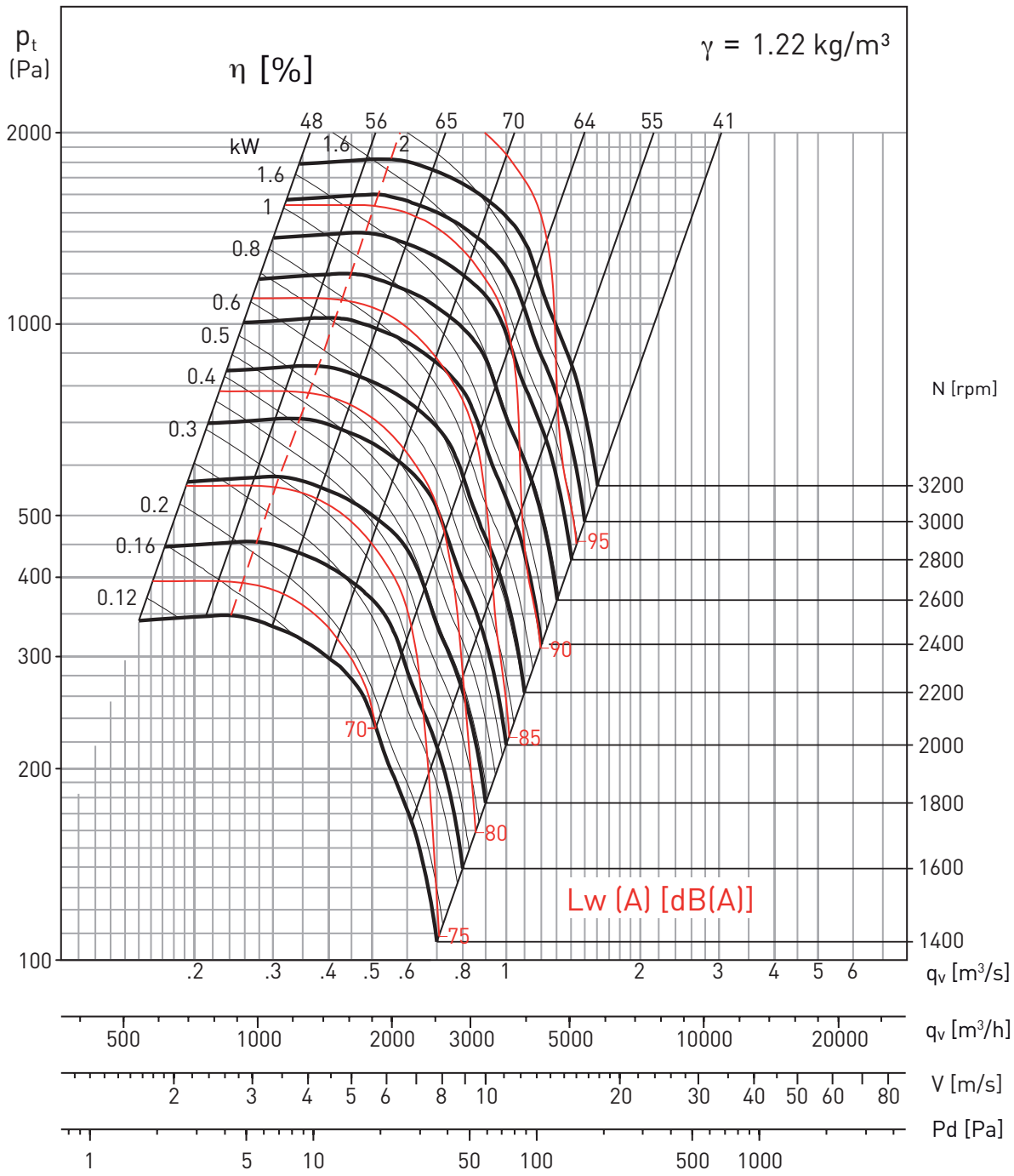
- Airflow: $q_v$ = 6660 $m^3/h$
- Outlet velocity: V = 6.77 m/s
- Dynamic pressure: Pd = 27 Pa
- Total pressure: $p_t$ = 1250 Pa
- Fan speed: N = 1510 rpm
- Absorbed power: W = 3.22 kW
- Total effciency: $\eta$ = 71.8 %
- Sound power level: Lw(A) = 81 dB(A)

- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.



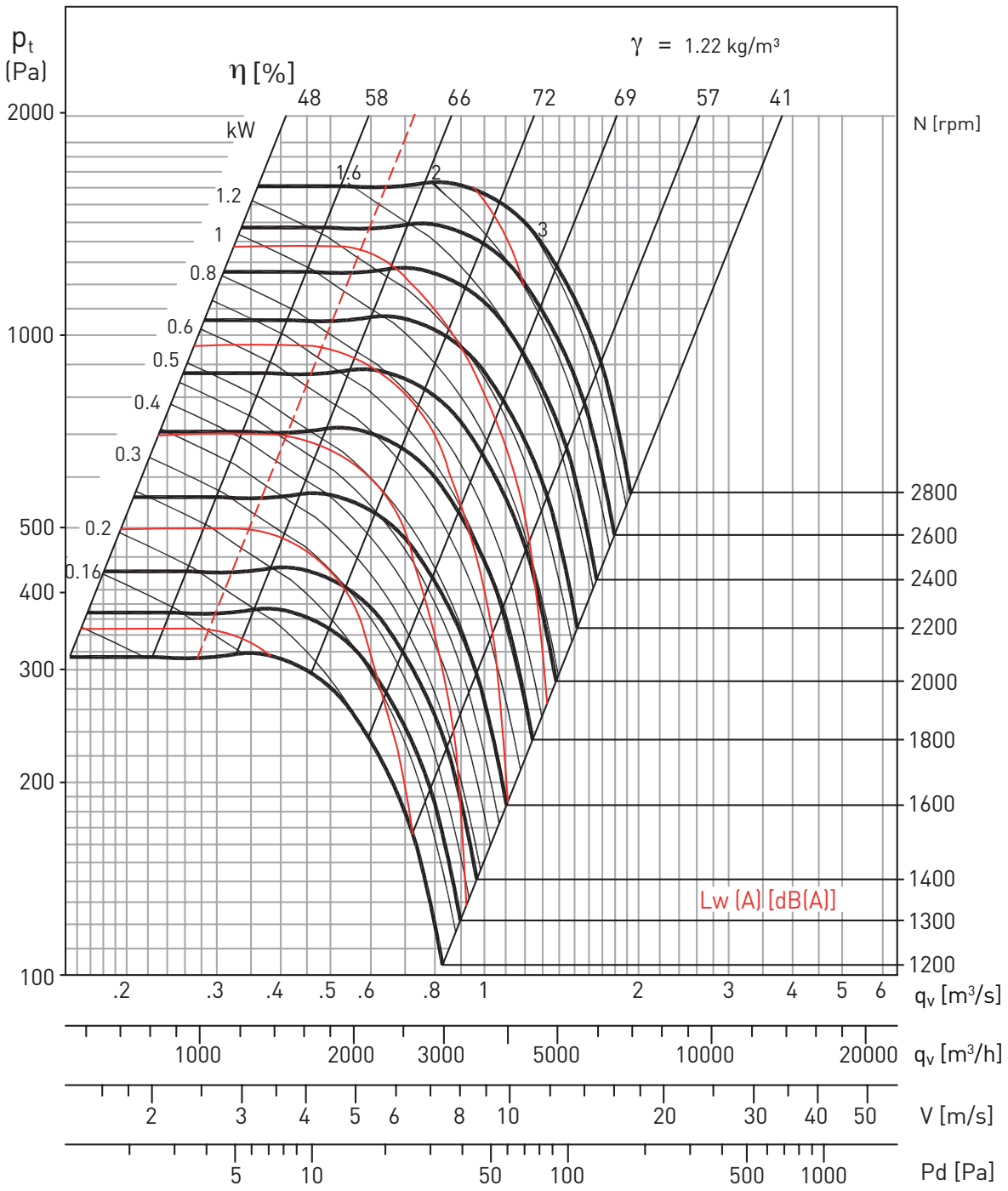
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

BSP 315

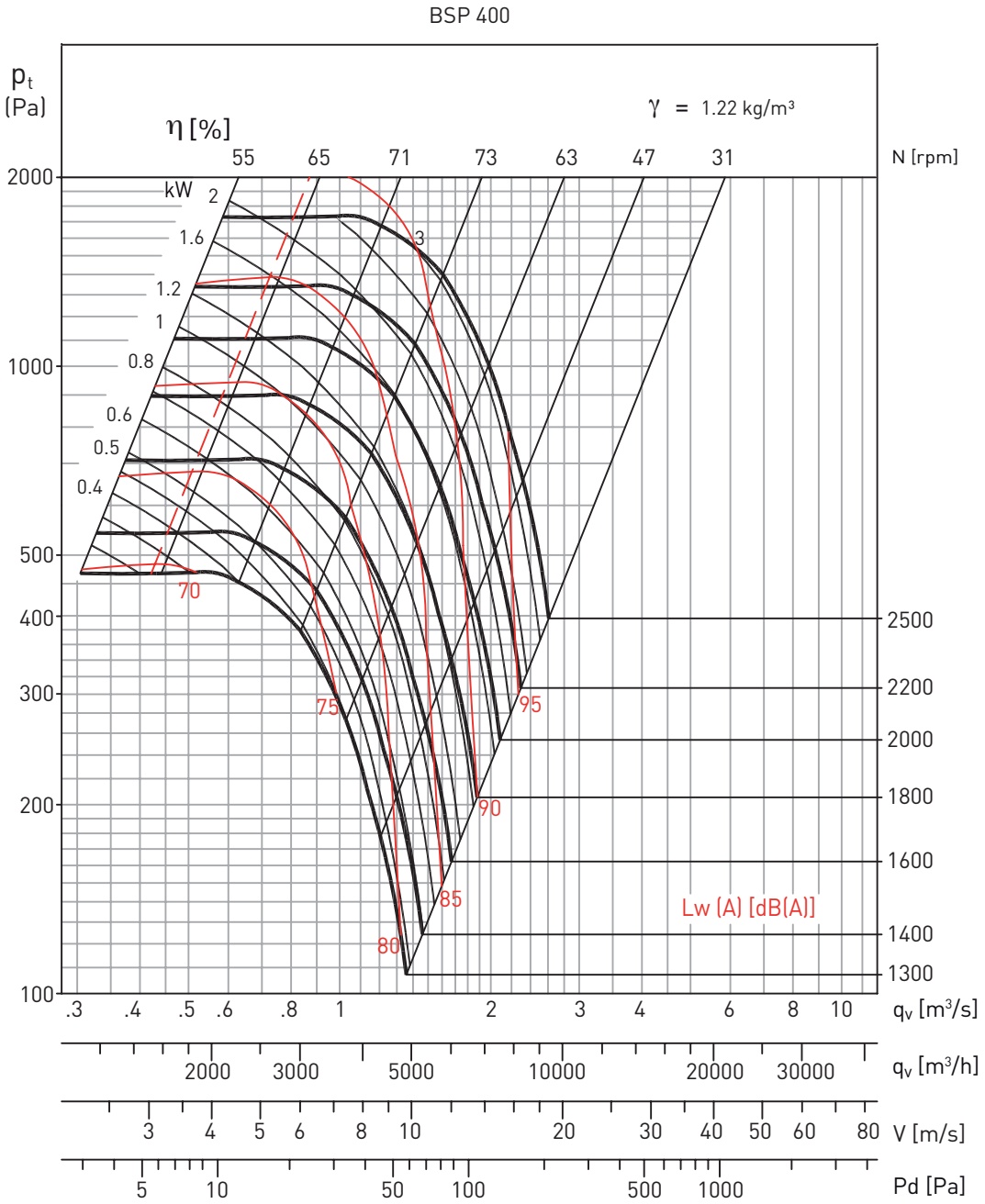


- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

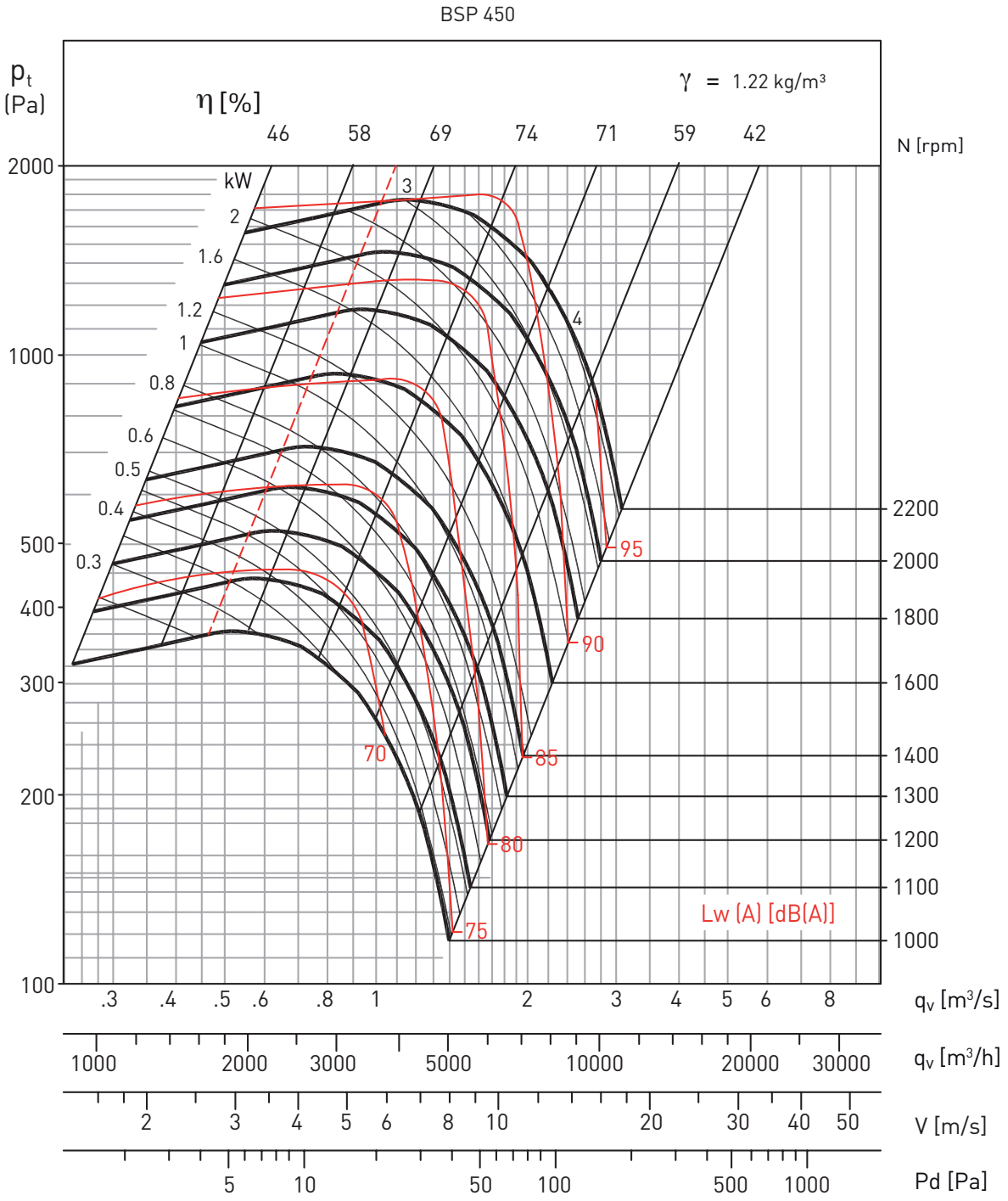
BSP 355



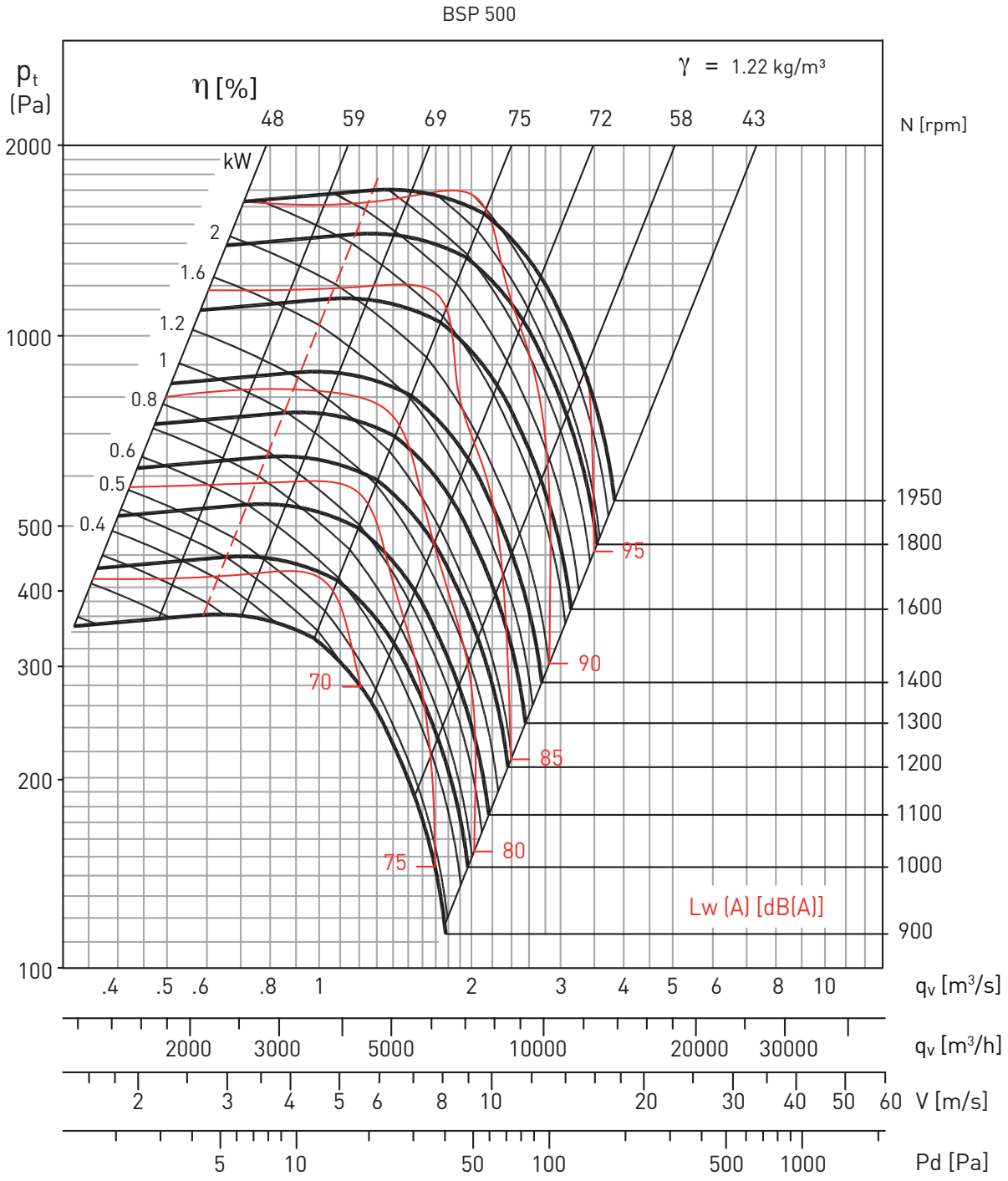
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.



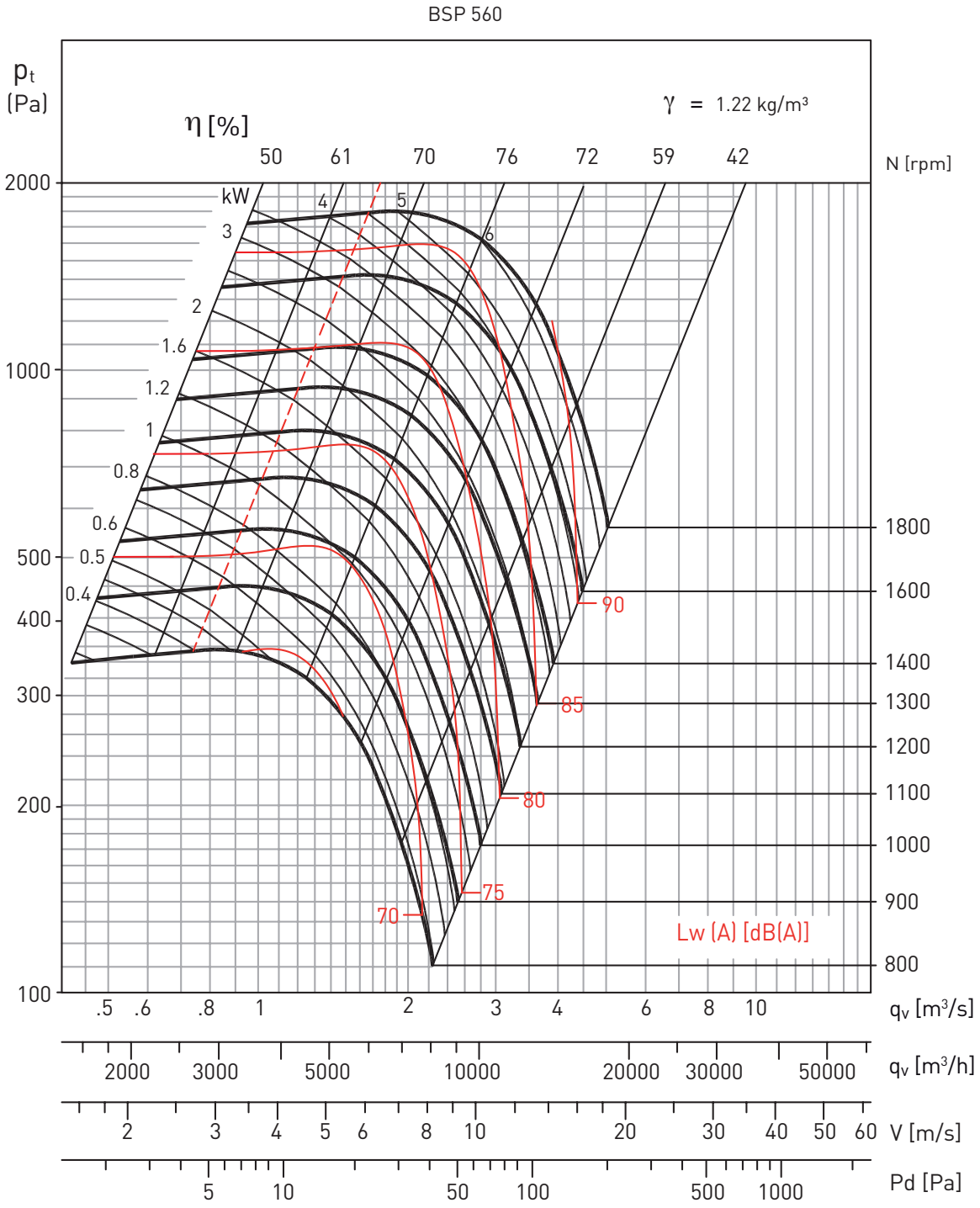
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.



- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

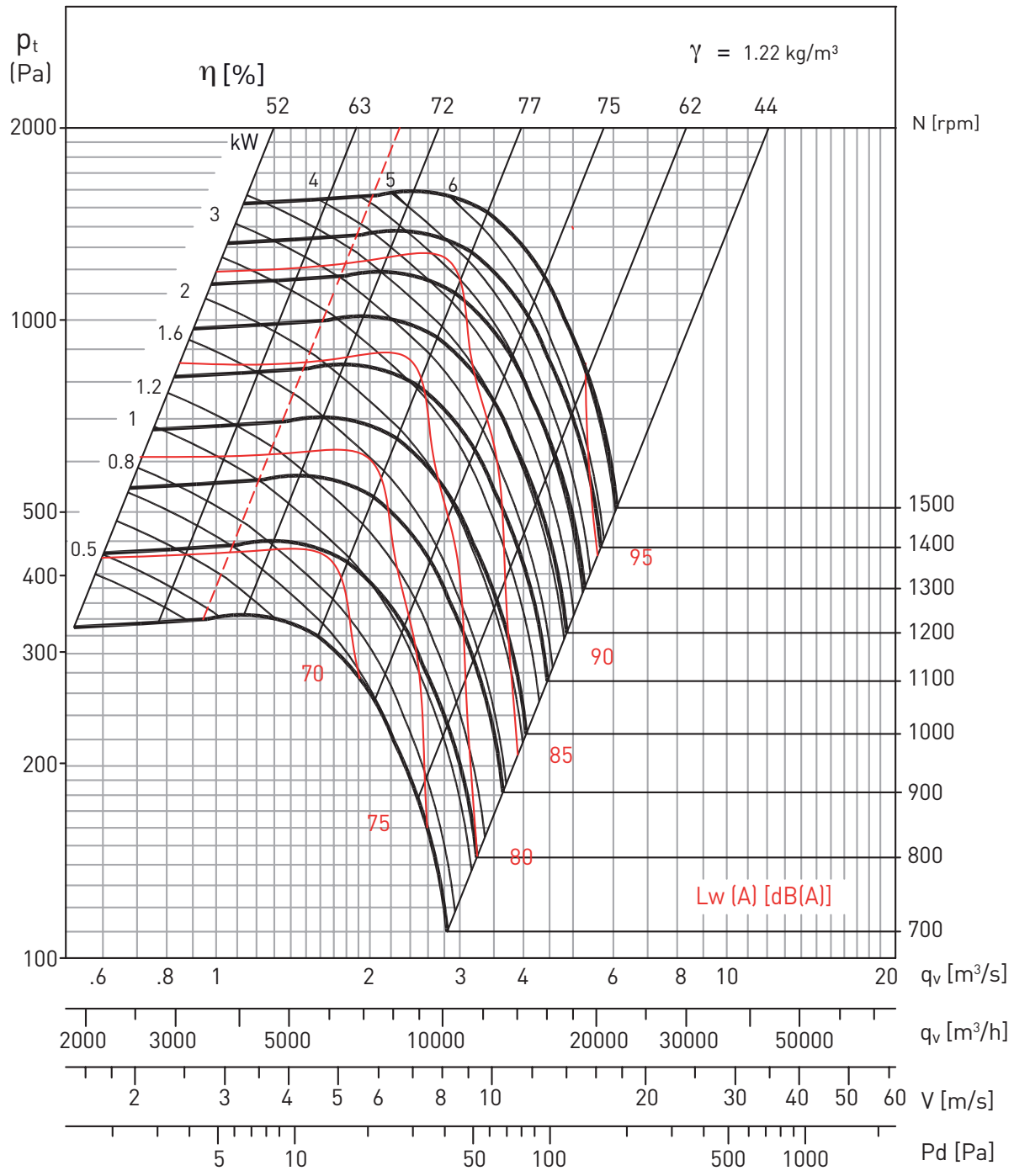


- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.



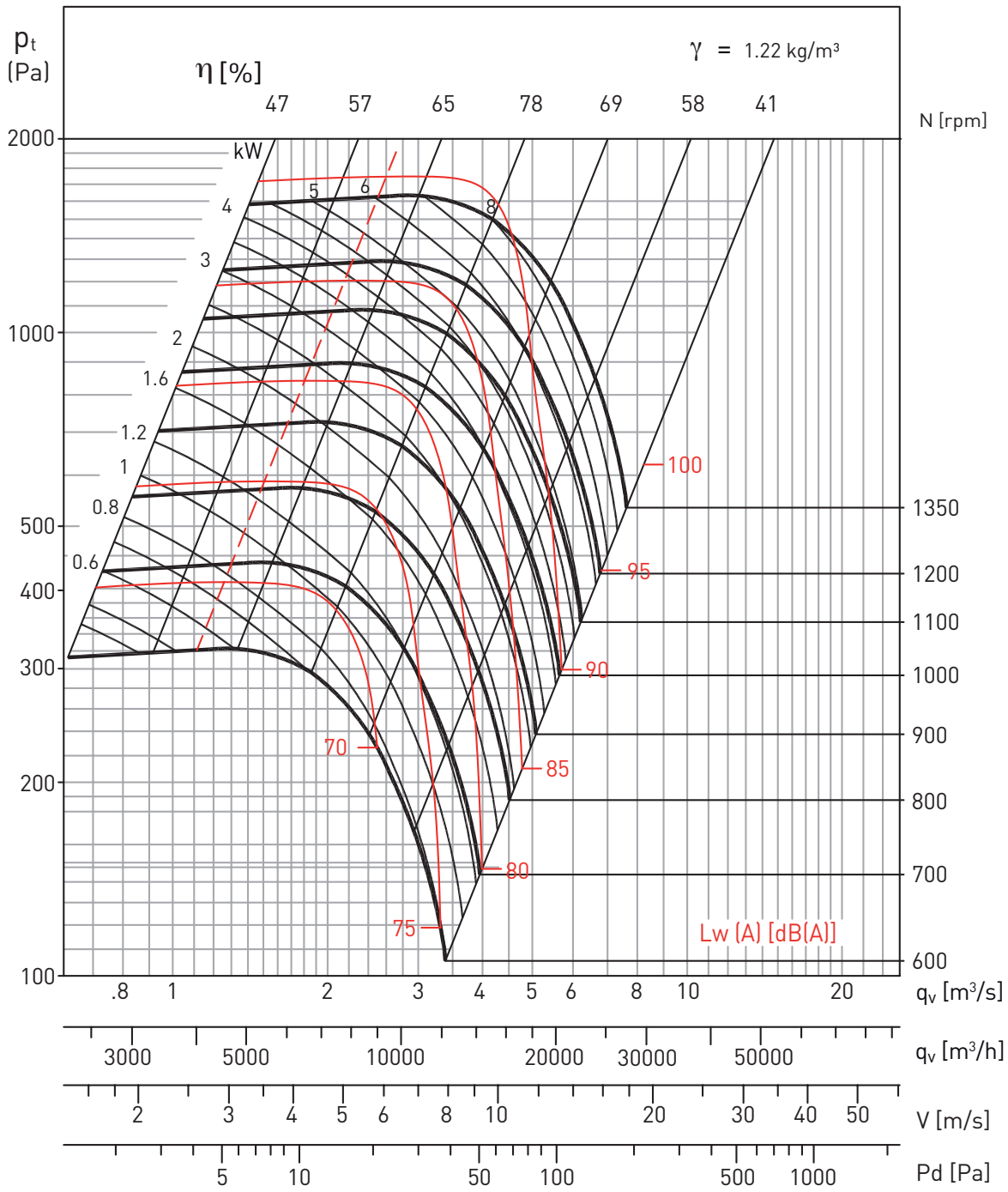
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

BSP 630



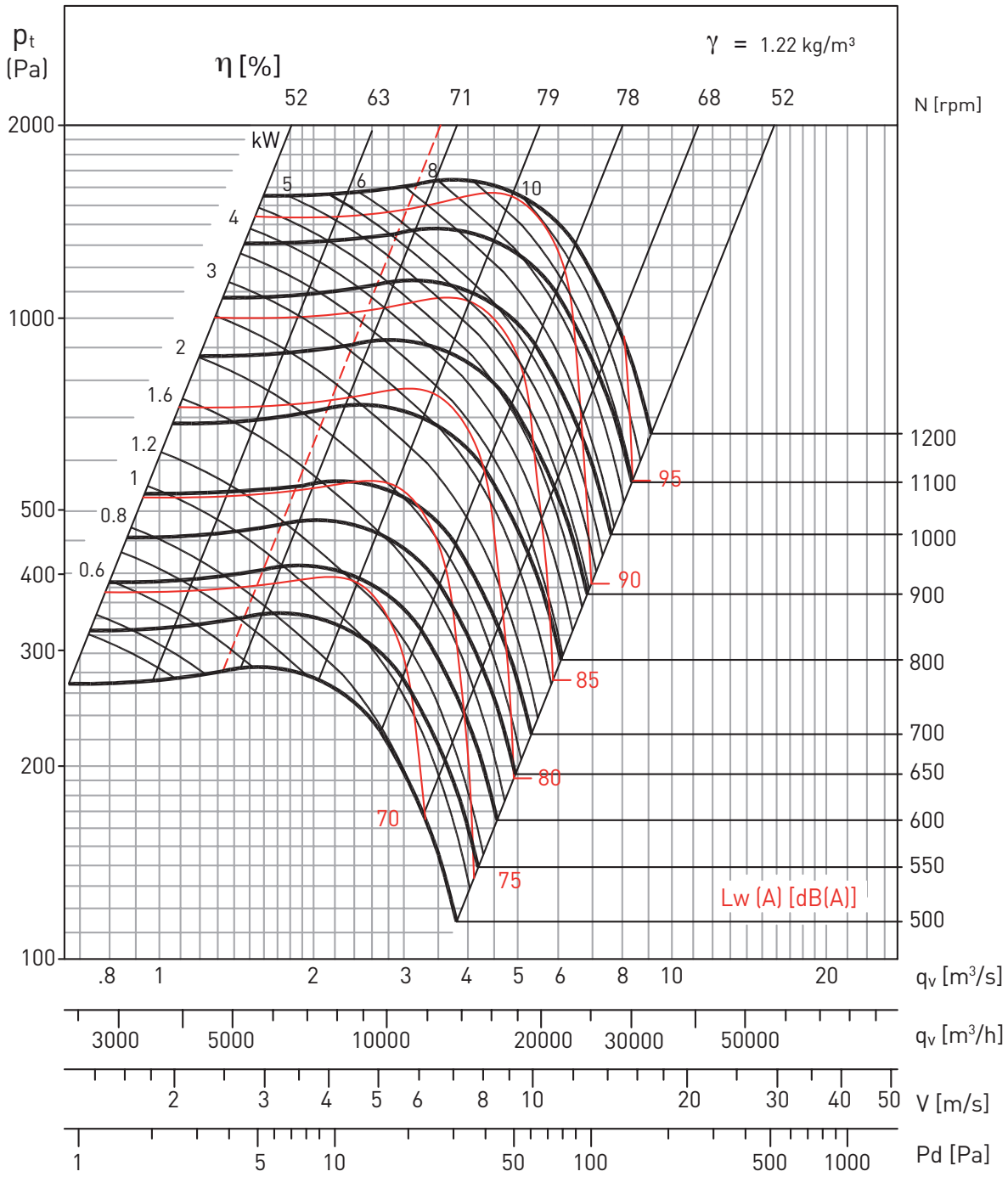
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

BSP 710



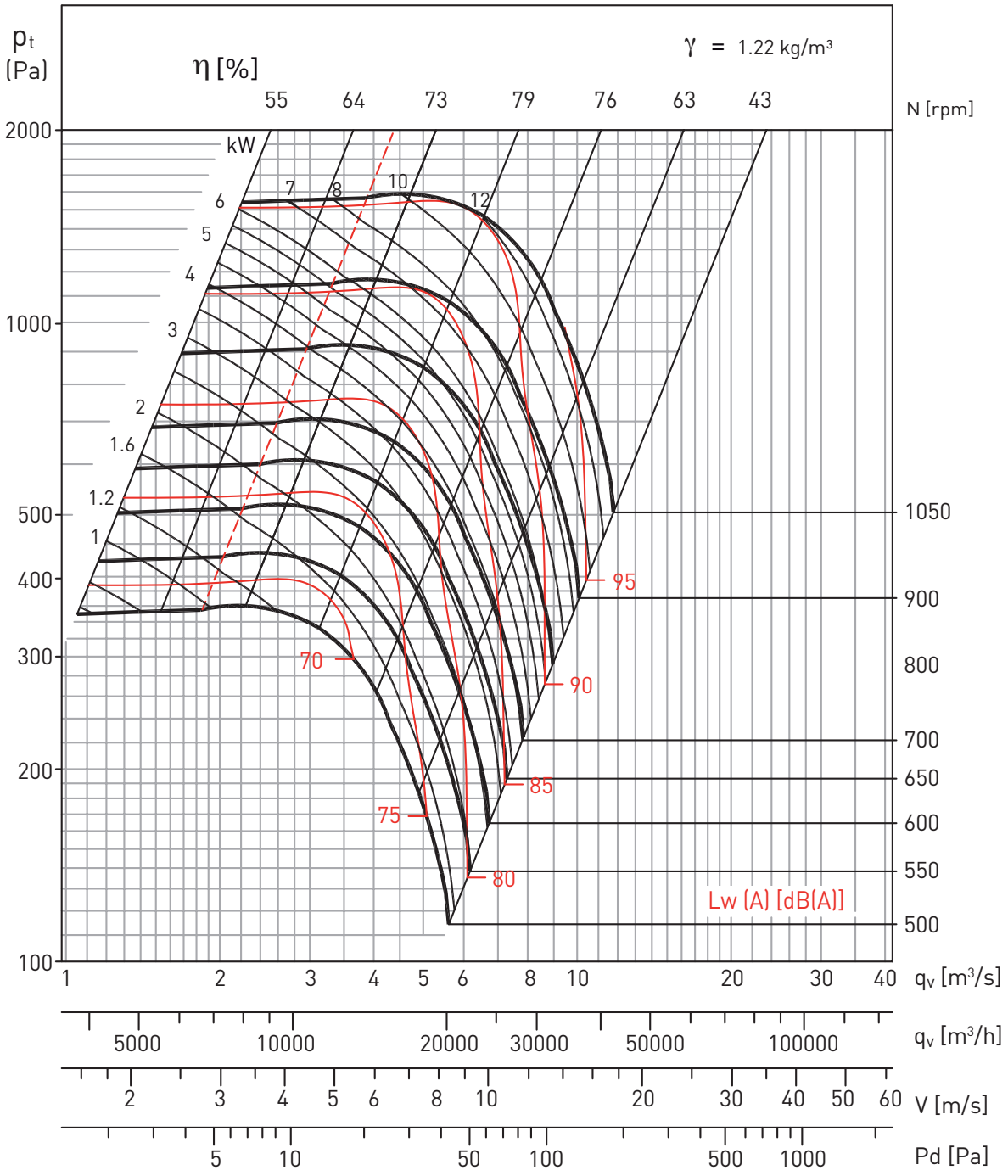
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

BSP 800



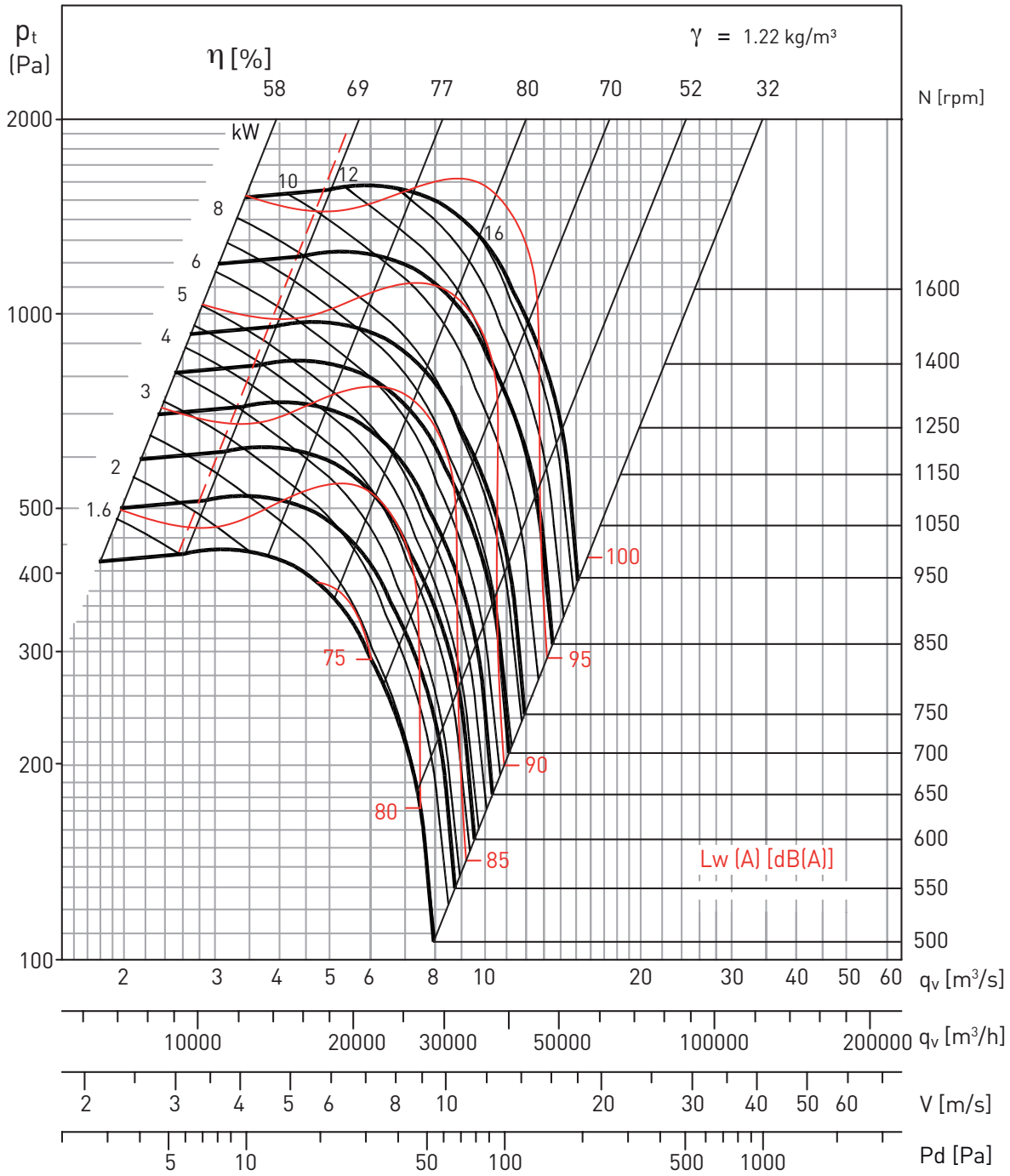
- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

BSP 900

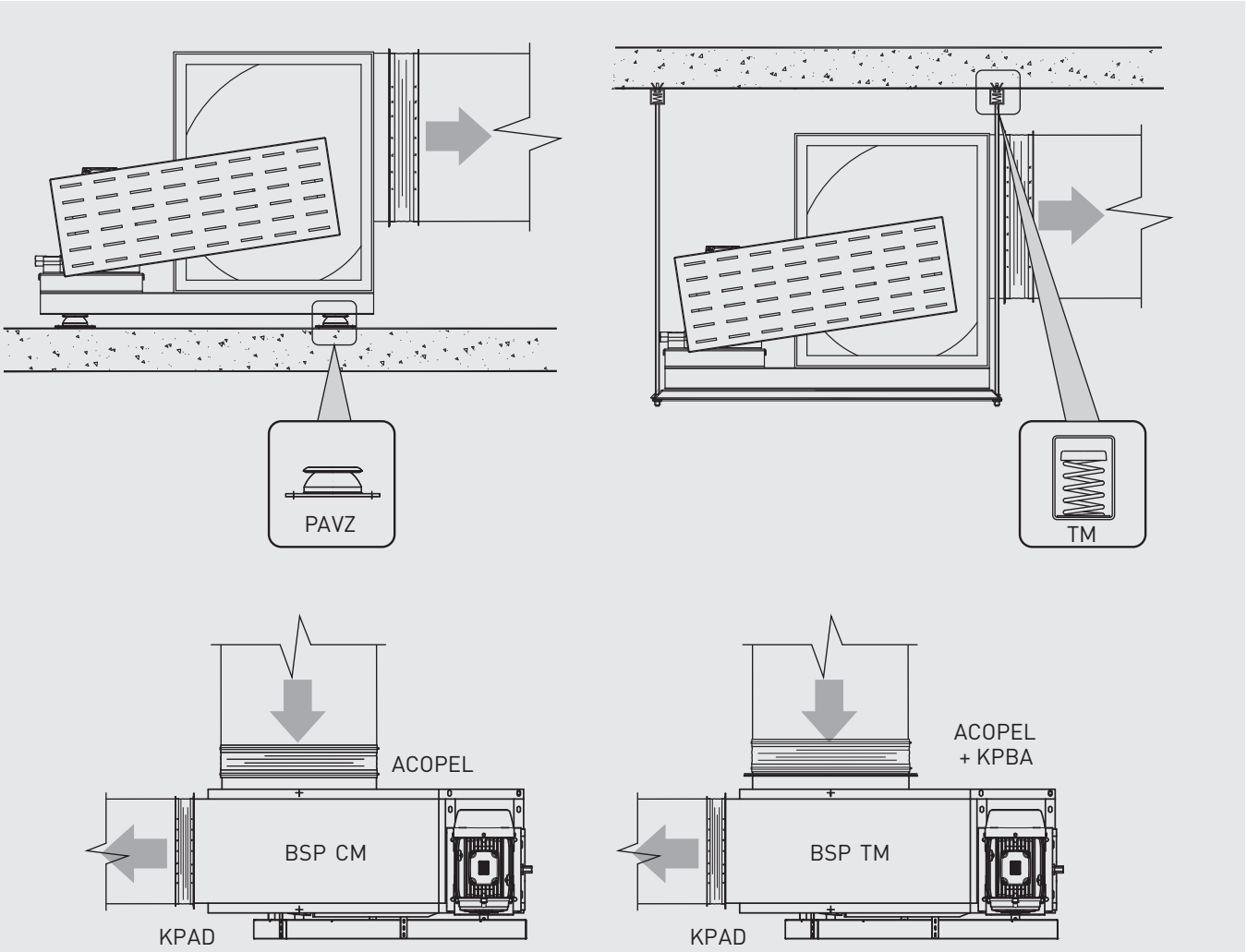


- Performance shown is for Installation type B - free inlet, ducted outlet. Performance ratings do not include the effects of appurtenances in the airstream. Power rating kW does not include drive losses.
- The A-weighted sound ratings shown have been calculated per AMCA standard 301. Values shown are for inlet Lwi(A) sound power levels for installation type B - free inlet, ducted outlet. Ratings do not include the effect of duct end corrections.

BSP 1000

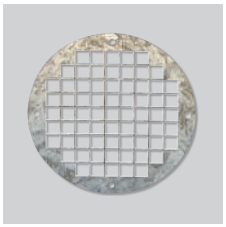


## MOUNTING ACCESSORIES

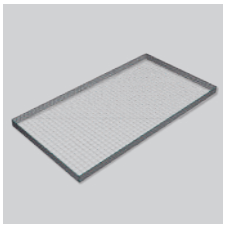



| BSP | Inlet guard | Outlet guard | Inlet duct flange | Circular flexible connector | Rectangular flexible connector | Anti-vibration mount | Anti-vibration hanger |
|---|---|---|---|---|---|---|---|
| 315 | KPJA-315 S/C | KPJD-315 | - | ACOPEL-315 | KPAD-315 | PAVZ | TM |
| 355 | KPJA-355 S/C | KPJD-355 | - | ACOPEL-355 | KPAD-355 | | |
| 400 | KPJA-400 S/C | KPJD-400 | - | ACOPEL-400 | KPAD-400 | | |
| 450 | KPJA-450 S/C | KPJD-450 | - | ACOPEL-450 | KPAD-450 | | |
| 500 | KPJA-500 S/C | KPJD-500 | - | ACOPEL-500 | KPAD-500 | | |
| 560 | KPJA-560 S/C | KPJD-560 | - | ACOPEL-560 | KPAD-560 | | |
| 630 | KPJA-630 S/C | KPJD-630 | - | ACOPEL-630 | KPAD-630 | | |
| 710 | KPJA-710 T | KPJD-710 | KPBA-710 | ACOPEL-710 | KPAD-710 | | |
| 800 | KPJA-800 T | KPJD-800 | KPBA-800 | ACOPEL-800 | KPAD-800 | | |
| 900 | KPJA-900 T | KPJD-900 | KPBA-900 | ACOPEL-900 | KPAD-900 | | |
| 1000 | KPJA-1000 T | KPJD-1000 | KPBA-1000 | ACOPEL-1000 | KPAD-1000 | | |

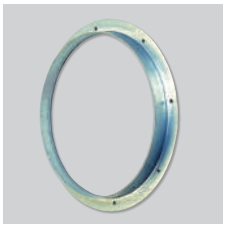
## MOUNTING ACCESSORIES



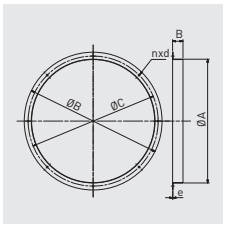
**KPJA**
Proof guard for mounting at the BSP fan inlet.



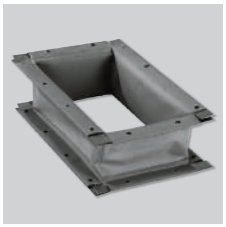
**KPJD**
Rectangular guard for mounting at the BSP fan outlet.



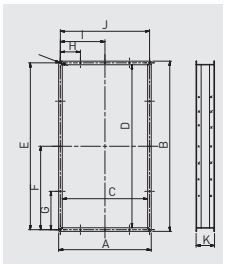
**KPBA**
Inlet duct flange.




| Model | Ø A | B | Ø C | Ø D | e | nxd |
|---|---|---|---|---|---|---|
| KPBA-710 | 715 | 60 | 751 | 796 | 2 | 8x11 |
| KPBA-800 | 803 | 60 | 837 | 886 | 2 | 12x12 |
| KPBA-900 | 903 | 60 | 934 | 986 | 2 | 12x12 |
| KPBA-1000 | 1004 | 60 | 1043 | 1086 | 2 | 12x12 |



**KPAD**
Rectangular flexible connector for mounting at the BSP fan outlet.




| Model | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KPAD-315 | 279 | 460 | 223 | 404 | 434 | 217 | - | - | 126,5 | 253 | 143 |
| KPAD-355 | 303 | 508 | 247 | 452 | 482 | 241 | - | - | 138,5 | 277 | 143 |
| KPAD-400 | 330 | 562 | 274 | 506 | 536 | - | 168 | 91 | - | 304 | 143 |
| KPAD-450 | 364 | 624 | 308 | 568 | 598 | - | 199 | 108 | - | 338 | 143 |
| KPAD-500 | 401 | 694 | 345 | 638 | 668 | - | 209 | 113 | - | 375 | 143 |
| KPAD-560 | 439 | 770 | 383 | 714 | 744 | - | 247 | 132,5 | - | 413 | 143 |
| KPAD-630 | 489 | 856 | 433 | 800 | 830 | - | 265 | 143,5 | - | 463 | 143 |
| KPAD-710 | 535 | 954 | 479 | 898 | 928 | 464 | 264 | 141 | 254,5 | 509 | 143 |
| KPAD-800 | 589 | 1062 | 533 | 1006 | 1036 | 518 | 268 | 142 | 281,5 | 563 | 143 |
| KPAD-900 | 651 | 1186 | 595 | 1130 | 1160 | 580 | 280 | 147,5 | 312,5 | 625 | 143 |
| KPAD-1000 | 719 | 1322 | 663 | 1266 | 1296 | 648 | 298 | 156 | 346,5 | 693 | 143 |

**ACOPEL F400 N ***
Circular flexible connector.
Certified F400-120.

**PAVZ***
Rubber anti-vibration mounts that absorb vibration and attenuate the noise produced in the installation.
(*1 PAVZ= 4 supports in a bag).

**TM**
Anti-vibration mounts hanger that absorb vibration and attenuate the noise produced
in the installation.

* For more information see Mounting accessories.