

# HUMIDIN



## Centrifugal Blower

Forward Curved-ACFC Series



A.C. HUMIDIN AIR SYSTEMS certifies that the ACFC Series shown herein are 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 Ratings Program.



[www.humidin.com](http://www.humidin.com)



## **CENTRIFUGAL BLOWER [ACFC SERIES]** **DIDW** (*Double Inlet Double Width*) With Forward Curved Impeller

### When Quality Speaks For Itself

As a leading manufacturer of Centrifugal Blower Forward Curved ACFC Series, today Humidin enjoys an enviable position in customer mind-space.

Humidin boasts of a modern plant & a talented team of qualified professionals who sets an exacting standards of quality for themselves.

In sum, Humidin stands for quality & customer satisfaction that are instrumental in bringing them on par with what the world calls the world class.



## ACFC SERIES

### Double Inlet Forward Curved Centrifugal Blower

The ACFC series Centrifugal Blower (Forward Curved) consist of Double Inlet Double Width (DIDW) centrifugal fans. These fans have forward curved impellers with forward curved blades having special profile to give you maximum efficiency at low noise levels. These impellers are statically and dynamically balanced. The fans are suitable for various applications, where high volume air displacement is required like Air Cooling, General Ventilation, Pressurization etc., in commercial process and industrial HVAC systems

Available Sizes : The ACFC Series is available in wheel size 500 mm to 1120mm diameter.

#### TYPE

HUMIDIN ACFC series fans are designed for various duty application and are available in various type of construction, however, here in this catalogue, we shall present only type-A

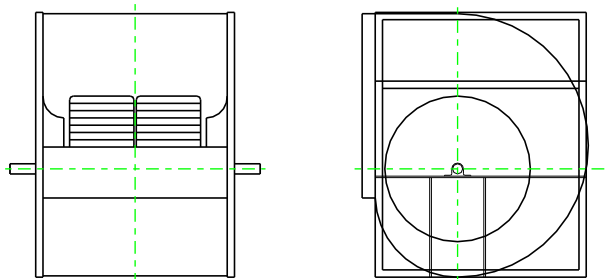
#### TYPE - A

The ACFC series is available in type A where strong side frame (M.S.) in welded construction are provided to support the Bearing and for wheel assembly

Fan size : 500 to 1120

Volume : 1000 to 100000 m<sup>3</sup>/h

Total Pressure : 100Pa to 1600 Pa



### ACFC Twin Fan

HUMIDIN also manufactures the twin fan mounted on single shaft.

For easiness in selection, please, make use of single fan curves, given in this catalogue with following factors:

Volume x 2

Absorbed Power x 2.15

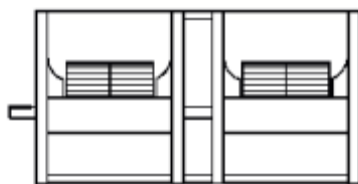
Speed x 1.05

Noise x 3 db

#### Type A2

Size : 500 to 630

Vol. : 1500 to 65000 m<sup>3</sup>/h



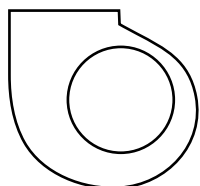
*Note-Fan performance for twin fan are not licensed by AMCA International*



## ACFC SERIES

### IMPELLER

HUMIDIN ACFC series impellers have forward curved blades manufactured in GI steel sheet. The blades are die formed. The Impellers are statically and dynamically balanced to ISO 1940 and AMCA 204-G2.5 standards



### CASING

The casing for all sizes is manufactured in GI steel sheet and are Pittsburgh locked without any surface coating (optional)

### SIDE SUPPORTING FRAME (MS)

The side supporting frames are fabricated out of MS section steel. The surface is finished with enamel/epoxy coatings.



### GRINDED SHAFT

The shaft used for the fan are made of EN-8/SAE-1040 carbon steel and machined to the prescribed tolerances with standard keyways. The Shaft are grinded for better performance and finish. The Shafts are coated with Varnish/Laquer after assembly.

### BEARINGS

HUMIDIN forward curved blower have bearings of international standard. The Bearings are either deep groove ball bearings or spherical roller bearings with eccentric locking collars/adaptor sleeve sealed at both sides. The Bearings are pre-lubricated and are maintenance free.



### INLET CONE

The Standard Inlet Cones are made of FRP, however for bigger sizes the fabricated Inlet Cones, made of sheet steel material are provided. The Inlet Cones are designed Aerodynamically for better efficiency.

### ACCESSORIES

Drain Plug in casing - optional.  
Outlet Flanges - optional.  
Inspection Doors - optional (one position).  
Guards at Inlet or outlet are optional



## ACFC SERIES

### Fan Rotation and Discharge

The rotation and discharge of the fan is in accordance with AMCA standard 99-2406-03.  
The direction of rotation is determined from the drive end of the fan

CW - clockwise rotation  
CCW - counter-clockwise rotation

	90°	180°	270°	360°
CW				
CCW				

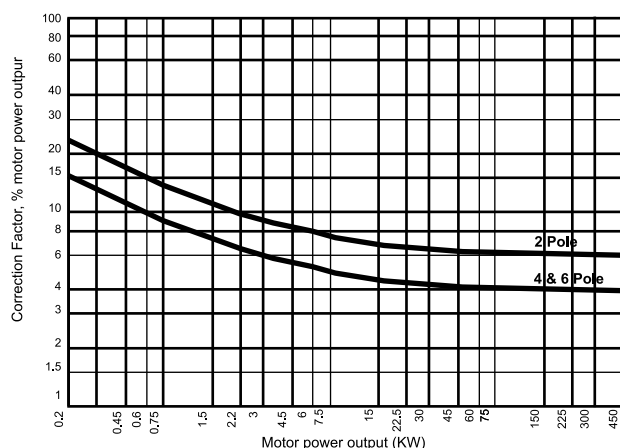
Fan rotation and discharge

### Motor Selection

The power curve shown on each performance curve 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 transmission losses.

For conversion to horsepower (HP), use multiplying factor 1.34.

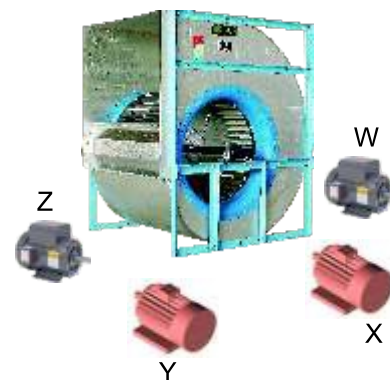


Recommended for compensation

### Motor Position

The position of the motor for belt drive centrifugal fan is in accordance with AMCA standard 99-2407-03.

Location of motor is determined by facing the drive side of fan and designating the positions by letters W, X, Y & Z.



Motor Position



### DYNAMIC PRESSURE

The dynamic pressure and outlet air velocity shown on each curved are calculated on the full air discharge area, i.e. ducted outlet conditions.

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

Fan performances calculated with this correction factors are not licensed by AMCA International.

$$[K = 2.6]$$

### PERFORMANCE

The performance data shown on each diagram has been tested and measured in accordance to AMCA Standard 210.

Ratings are referred to the standard air density with the total pressure as a function of the air volume, using logarithmic scales.

It is essential that, the same installation type and test standard are used at all times, when comparing fan

### NOISE

The **noise** level shown on each diagram refer to the sound power "A-weighted" and the data on the inlet side has been measured in accordance with AMCA Standard 300 configuration "B". The noise level of the fans are determined as follows:

Sound power level - ("A" scale) :  $L_w(A)$  as catalogue

Octave band spectrum:  $L_w = L_w(A) + L_w \text{ rel. Db}$  [refer to Humidin for more details]

Sound pressure level:

(I) free field

$$L_p(A) = L_w(A) - (20\log_{10}d) - 11$$

(II) Room Conditions

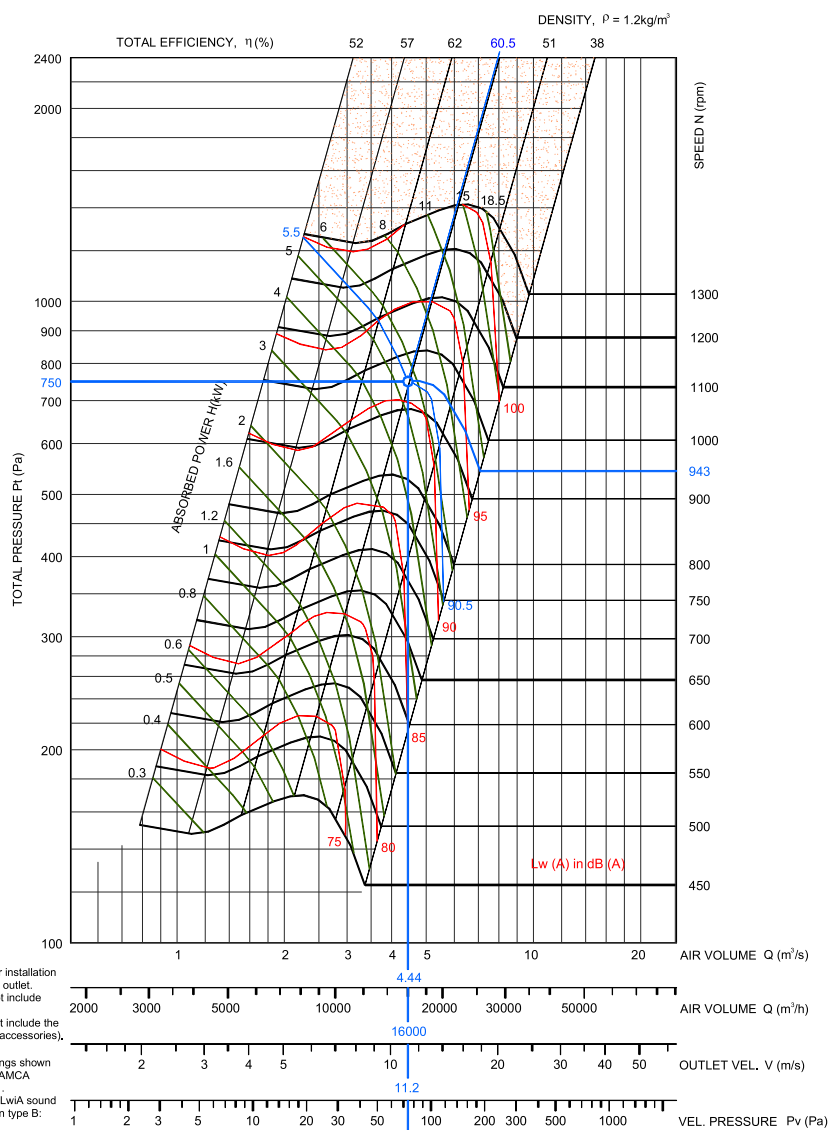
$$L_p(A) = L_w(A) - (20\log_{10}d) - 7$$



### Example of Selection

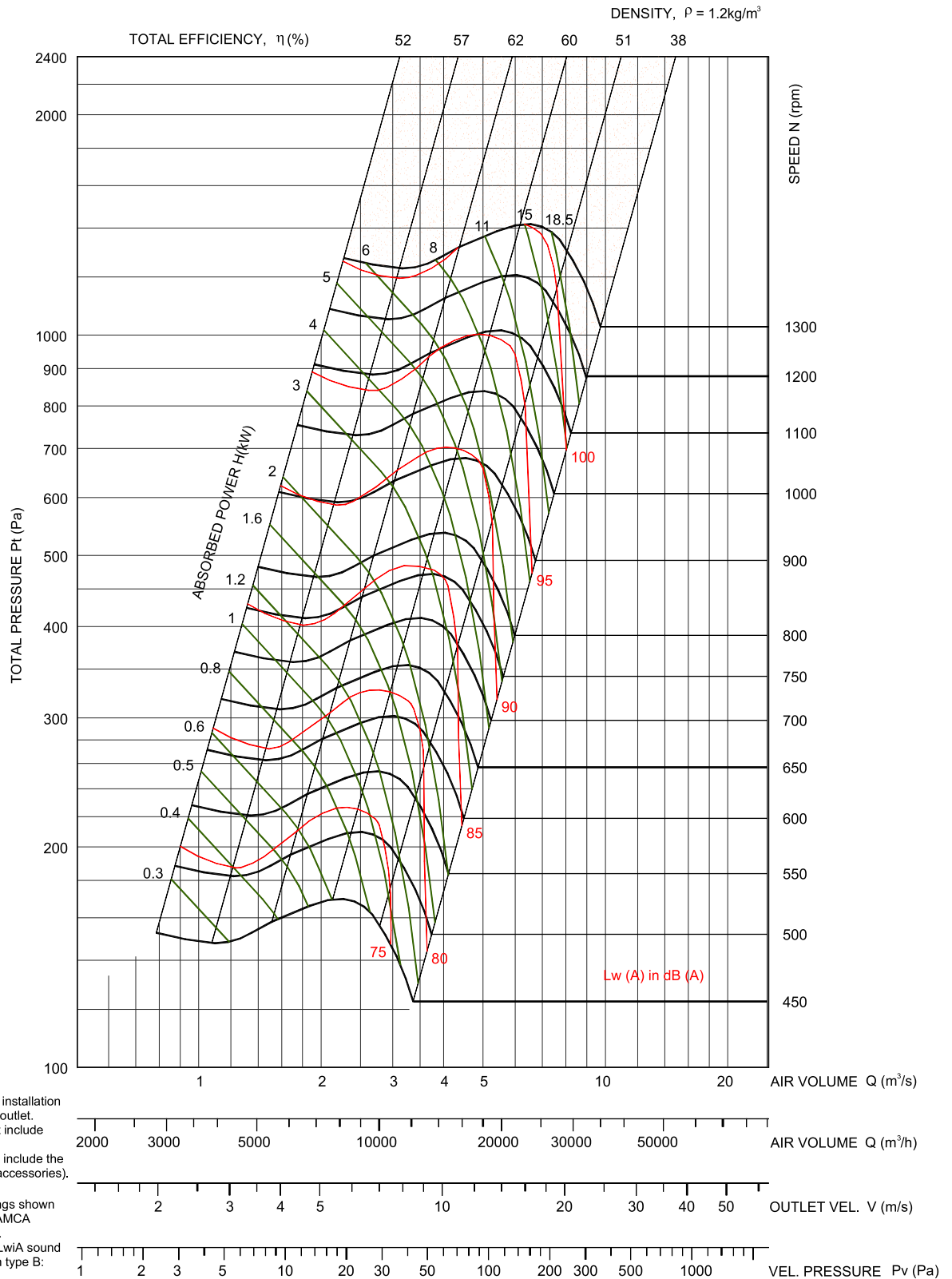
Air volume	$Q = 16\,000\text{ m}^3/\text{h}$
Outlet Velocity	$V = 11.2\text{ m/s}$
Velocity Pressure	$P_v = 74\text{ Pa}$
Total Pressure	$P_s = 750\text{ Pa}$
Fan Speed	$N = 943\text{ rpm}$
Absorbed Power	$H = 5.5\text{ kW}$
Total Efficiency	$\eta = 60.5\%$
Sound Power Level	$L_w(A) = 90.5\text{ dB(A)}$

### ACFC-500





### ACFC-500

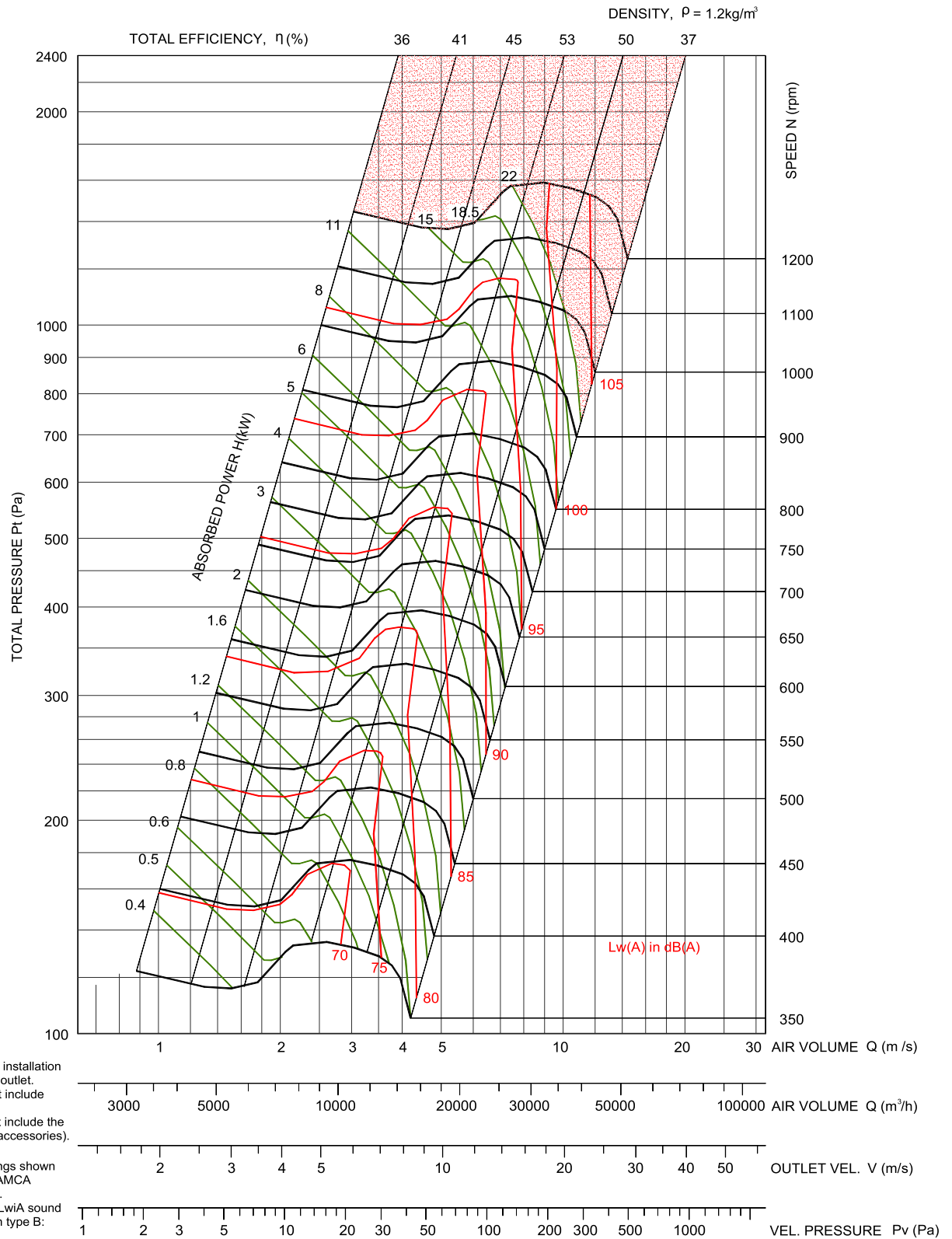


- \* Performance certified is for installation type B - Free inlet, Ducted outlet.
- \* Power rating (kW) does not include transmission losses.
- \* Performance ratings do not include the effects of appurtenances (accessories).
- \* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.
- \* Values shown are for inlet LwA sound power levels for Installation type B: free inlet, ducted outlet.



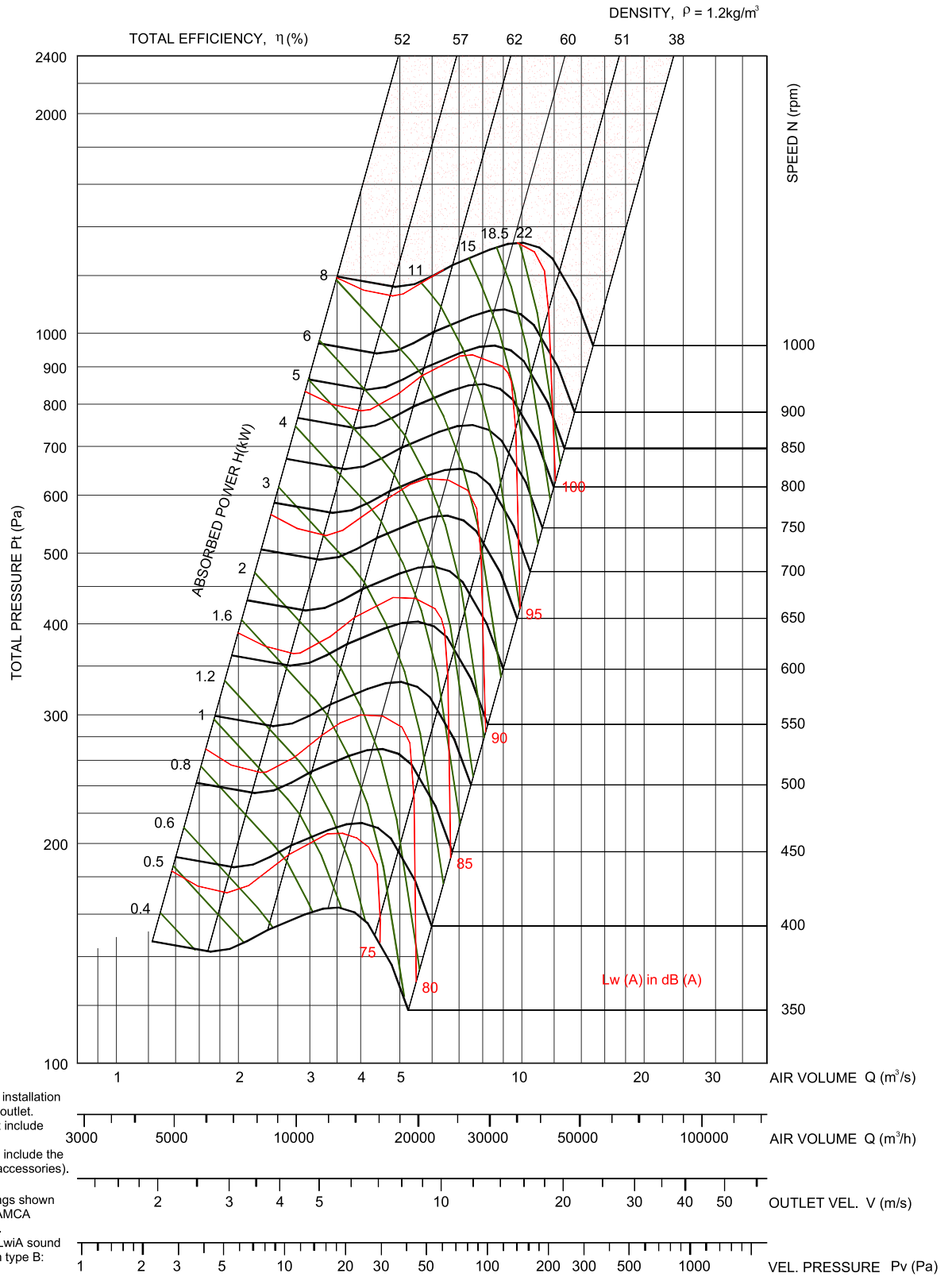
## ACFC SERIES

### ACFC-560



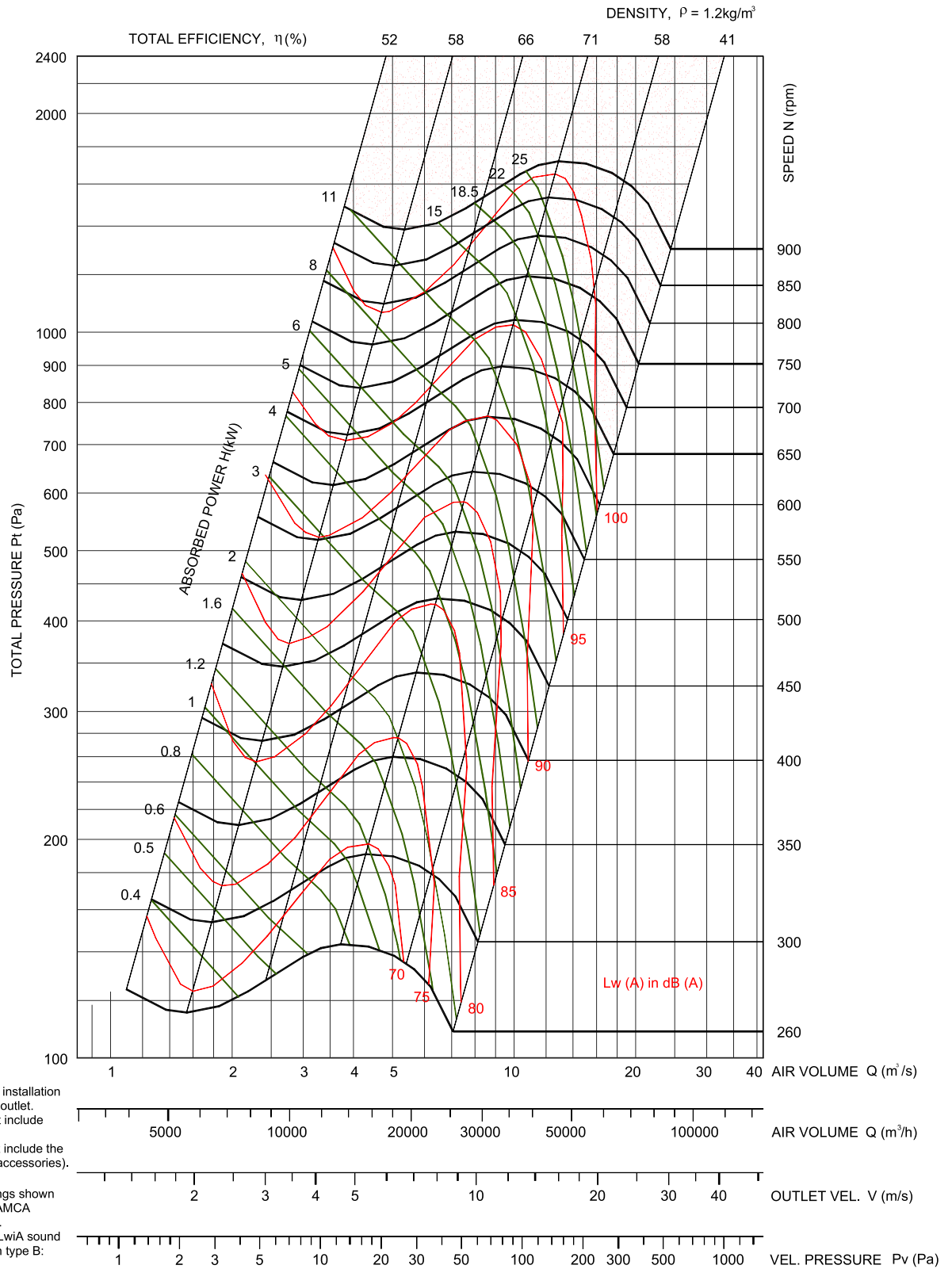


### ACFC-630

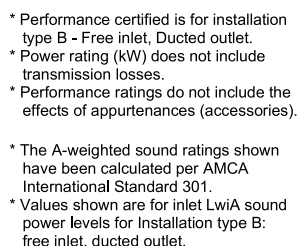




### ACFC-710

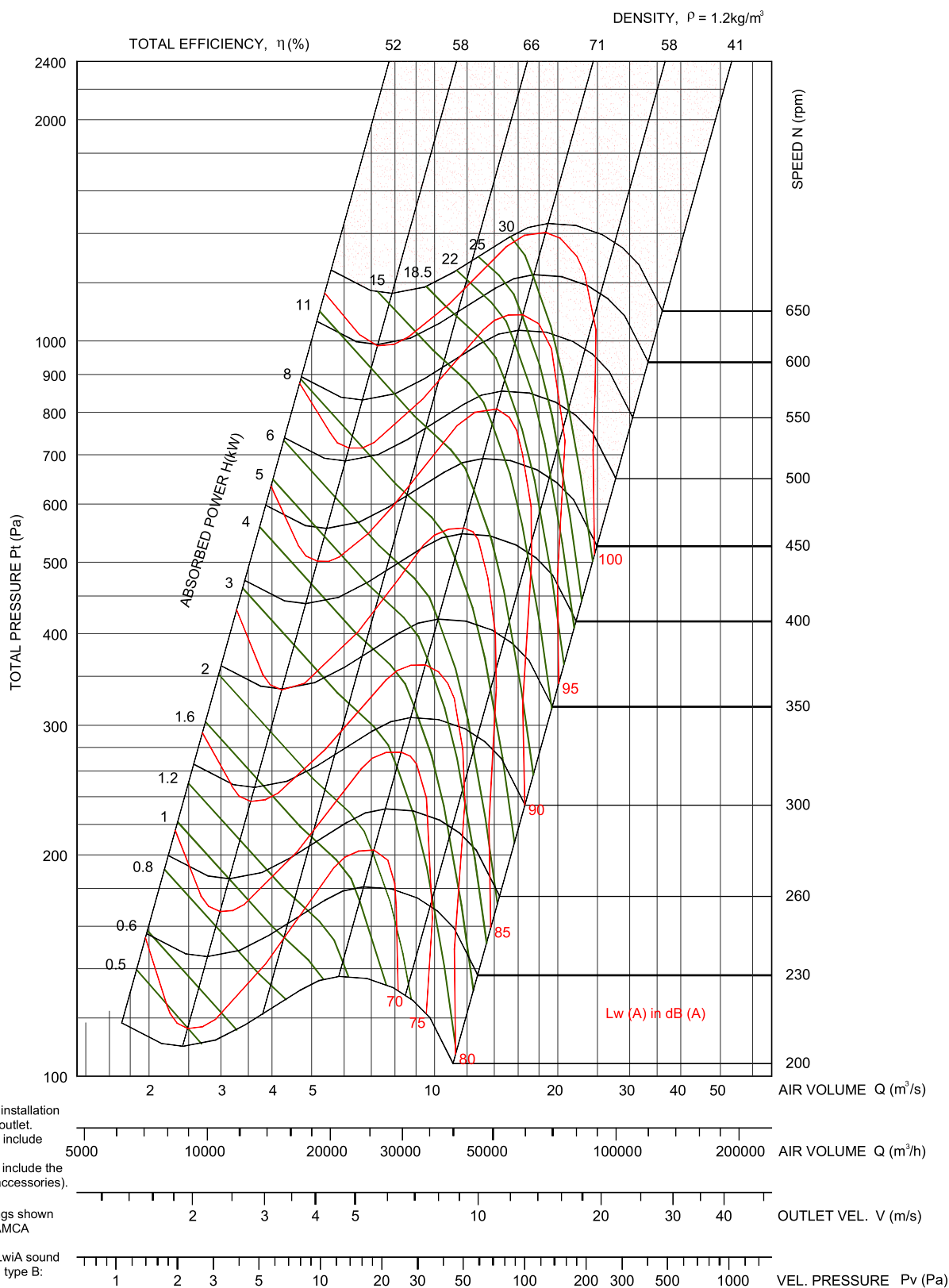


# ACFC-800





### ACFC-900



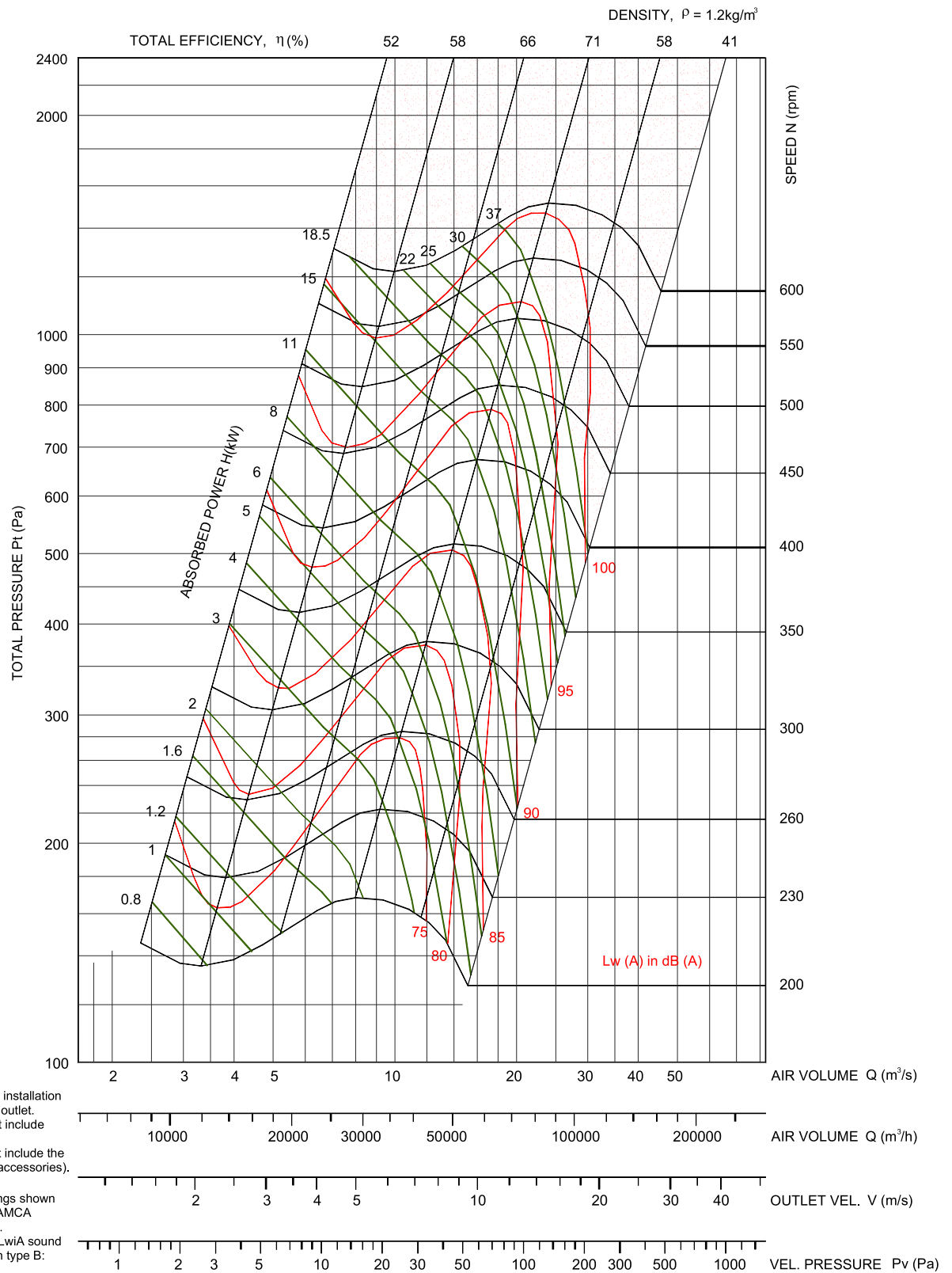
\* Performance certified is for installation type B - Free inlet, Ducted outlet.  
 \* Power rating (kW) does not include transmission losses.  
 \* Performance ratings do not include the effects of appurtenances (accessories).

\* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

\* Values shown are for inlet LwA sound power levels for Installation type B: free inlet, ducted outlet.

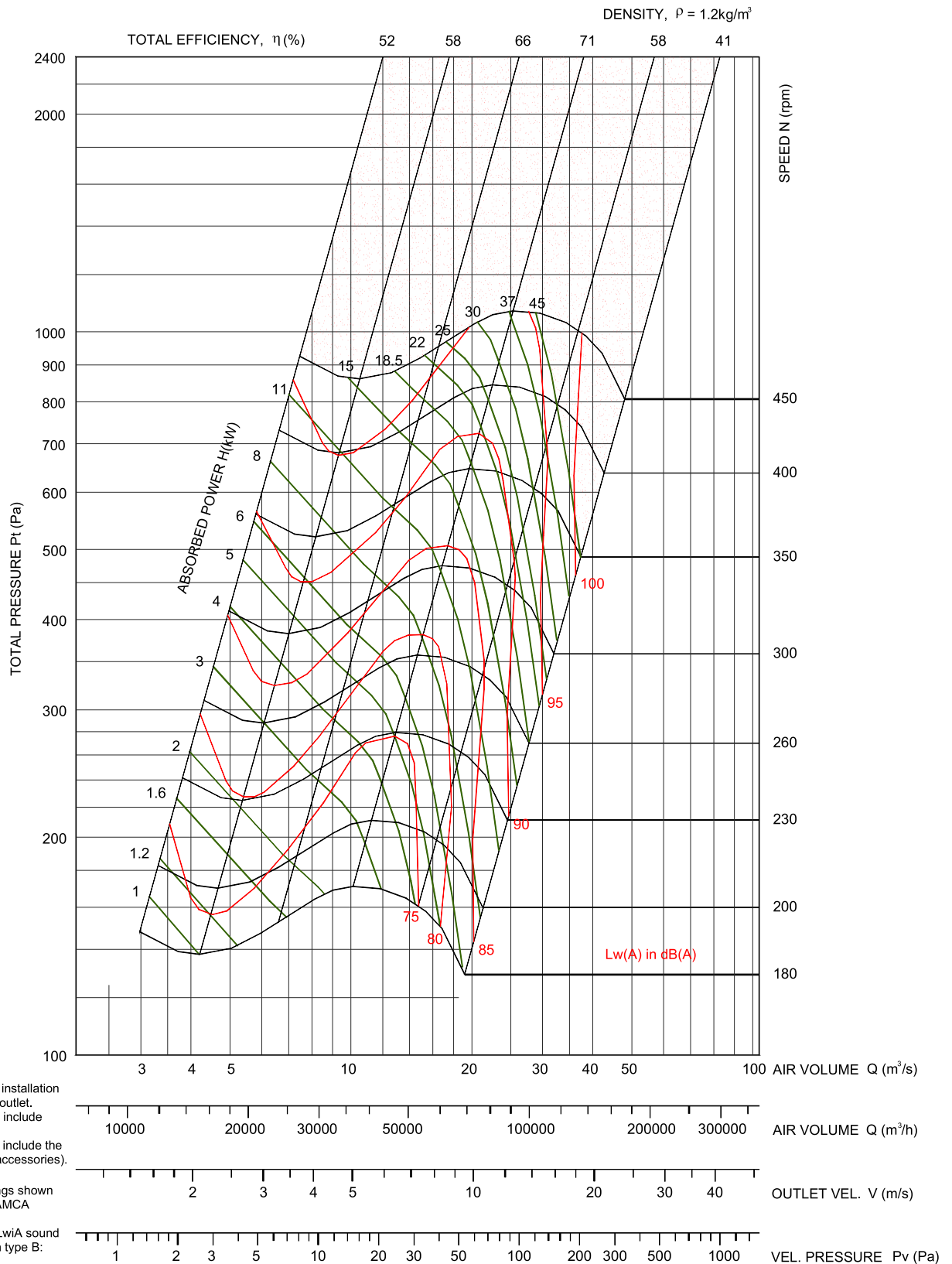


### ACFC-1000





### ACFC-1120



\* Performance certified for installation type B - Free inlet, Ducted outlet.  
 \* Power rating (kW) does not include transmission losses.  
 \* Performance ratings do not include the effects of appurtenances (accessories).

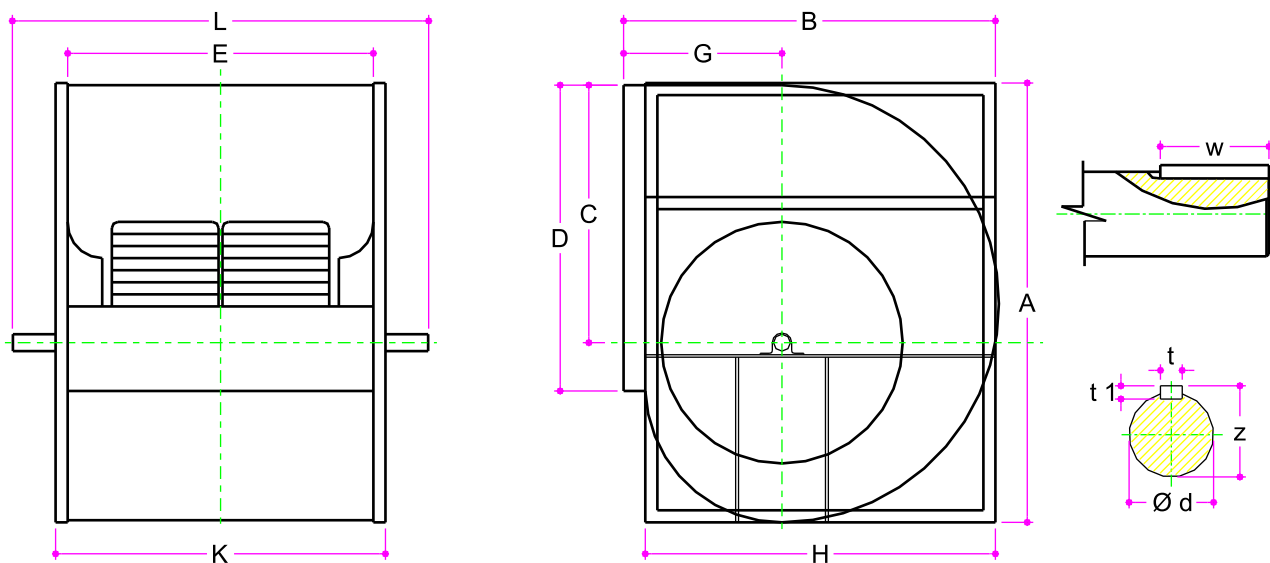
\* The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

\* Values shown are for inlet  $L_{wA}$  sound power levels for Installation type B: free inlet, ducted outlet.



## ACFC SERIES

TYPE - A  
MODEL ACFC-D (500 - 1120)



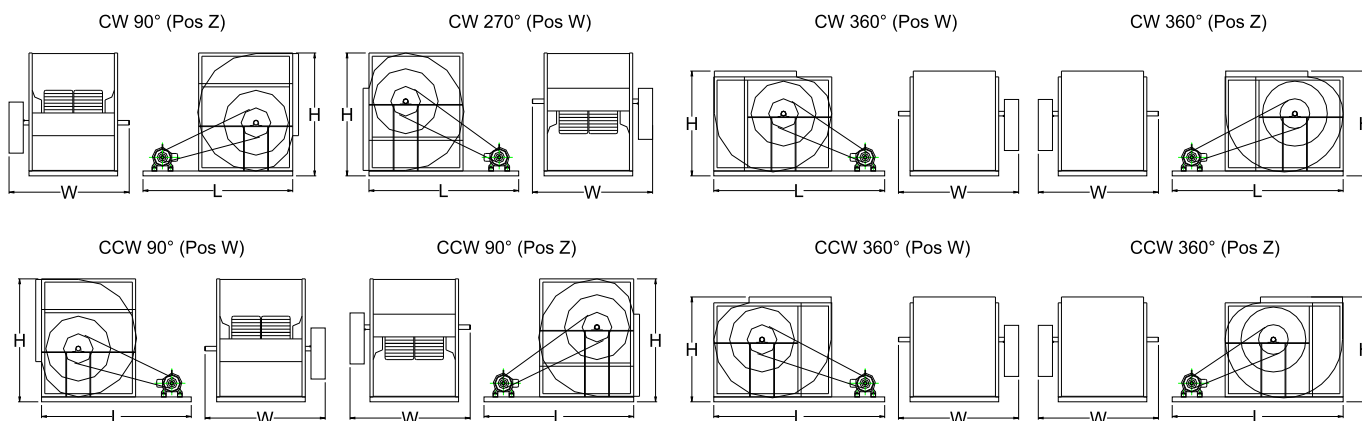
FAN Dia	A	B	C	D	E	G	H	K	L	t	t1	w	z	Ød
500	921	802	538	638	638	352	752	718	960	12	8	70	43	40
560	1033	894	603	714	714	390	846	814	1050	12	8	90	43	40
630	1160	1000	679	800	800	434	947	900	1170	14	9	90	48.5	45
710	1305	1122	765	898	898	484	1059	998	1285	14	9	90	54	50
800	1471	1256	862	1006	1006	540	1182	1106	1390	18	11	90	64	50
900	1651	1410	971	1130	1130	604	1321	1230	1570	18	11	90	64	60
1000	1813	1542	1066	1266	1266	656	1452	1366	1725	18	11	90	64	60
1120	2038	1727	1200	1422	1422	748	1632	1542	1900	22	14	110	80	75



## ACFC SERIES

### OVERALL DIMENSION - Type "A" Series

Model : ACFC-D (500 - 1120)

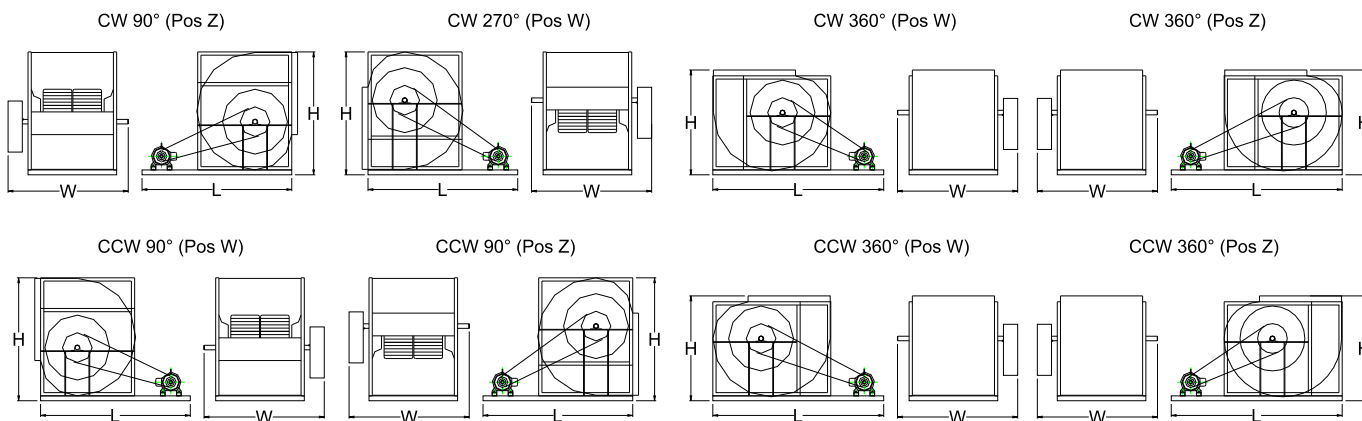


Model	Motor Frame Size	90°/270°			360°		
		L	W	H	L	W	H
500	112	1177	990	996	1346	990	877
	132	1277	990	996	1446	990	877
	160	1352	990	996	1521	990	877
	180	1402	990	996	1571	990	877
	200	1452	990	996	1621	990	877
560	112	1271	1080	1108	1458	1080	969
	132	1371	1080	1108	1558	1080	969
	160	1446	1080	1108	1633	1080	969
	180	1496	1080	1108	1683	1080	969
	200	1546	1080	1108	1733	1080	969
630	112	1372	1200	1235	1585	1200	1075
	132	1472	1200	1235	1685	1200	1075
	160	1547	1200	1235	1760	1200	1075
	180	1597	1200	1235	1810	1200	1075
	200	1647	1200	1235	1860	1200	1075
710	112	1484	1315	1380	1730	1315	1197
	132	1584	1315	1380	1830	1315	1197
	160	1659	1315	1380	1905	1315	1197
	180	1709	1315	1380	1955	1315	1197
	200	1759	1315	1380	2005	1315	1197
	225	1859	1315	1380	2105	1315	1197

## ACFC SERIES

### OVERALL DIMENSION - Type "A" Series

Model : ACFC-D (500 - 1120)



Model	Motor Frame Size	90°/270°			360°		
		L	W	H	L	W	H
800	112	1607	1420	1546	1896	1420	1331
	132	1707	1420	1546	1996	1420	1331
	160	1785	1420	1546	2071	1420	1331
	180	1832	1420	1546	2121	1420	1331
	200	1882	1420	1546	2171	1420	1331
	225	1982	1420	1546	2271	1420	1331
900	112	1746	1600	1726	2076	1600	1485
	132	1846	1600	1726	2176	1600	1485
	160	1921	1600	1726	2251	1600	1485
	180	1971	1600	1726	2301	1600	1485
	200	2021	1600	1726	2351	1600	1485
	225	2121	1600	1726	2451	1600	1485
1000	112	1877	1755	1888	2238	1755	1617
	132	1977	1755	1888	2338	1755	1617
	160	2052	1755	1888	2413	1755	1617
	180	2102	1755	1888	2463	1755	1617
	200	2152	1755	1888	2513	1755	1617
	225	2252	1755	1888	2613	1755	1617
1120	112	2057	1930	2113	2463	1930	1802
	132	2157	1930	2113	2563	1930	1802
	160	2232	1930	2113	2638	1930	1802
	180	2282	1930	2113	2688	1930	1802
	200	2332	1930	2113	2738	1930	1802
	225	2432	1930	2113	2838	1930	1802





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The intention of this brochure is to introduce you to, and acquaint you with the capabilities of the HUMIDIN organization in the offered product areas. It will not answer all your immediate questions, and indeed, it will no doubt raise others. We welcome your interest in our products and shall be very pleased to provide further information.

#### GUARANTEE

HUMIDIN guarantees its products to be free of defects in materials and workmanship for a period of one year from the date of delivery from the factory, provided motors are properly installed with overload protector. Humidin agrees to repair or replace defective parts or part to be returned to the factory, all transportation charges prepaid. Humidin does not guarantee against abrasion, corrosion or erosion. Humidin shall not be held responsible for any charges in connection with the removal or replacement of alleged defective equipment nor for incidental consequential damages.

In accordance with our policy of continual improvement in design, we reserve the right to depart from the details given in this brochure.

## A.C. HUMIDIN AIR SYSTEMS

PLOT NO: B-6, SECTOR: A-3 UPSIDC, TRONICA CITY, LONI- 201102 U.P. INDIA

PH. 0120-2696683, 2696684 FAX 0091-120-2696677

Email: [info@humidin.com](mailto:info@humidin.com)