

DB655/675/600

DESCRIPTION

Dutair blowers for pressure and vacuum are compact machines consisting of an electric motor with a built-on pump housing. The rotational speed of the impeller creates a high compression of the internal air, resulting in a vacuum at the inlet and pressure at the outlet of the blower. This process works without any contact, thus eliminating wear and the need for lubrication.

FEATURES

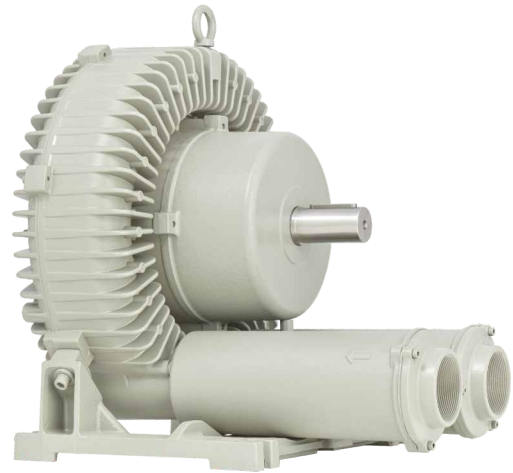
- compressor and vacuum pump in a single unit
- robust
- oil-free
- low noise levels
- low vibration levels
- maintenance free
- vertical mounting with in- / outlet pointing upwards possible
- integrated silencers
- many different applications

BENEFITS

- high motor efficiency and excellent power factor yield lower electrical consumption
- accurate performance curves in a frequency range of 30 to 80 Hz make Dutair blowers suitable for applications with a wide operating area
- detailed sound level data for acoustic purposes
- Dutair blower motors are fitted with PTC thermistors as standard
- a variety of modifications possible for non-standard applications



DB675



DB600

GENERAL TECHNICAL DATA

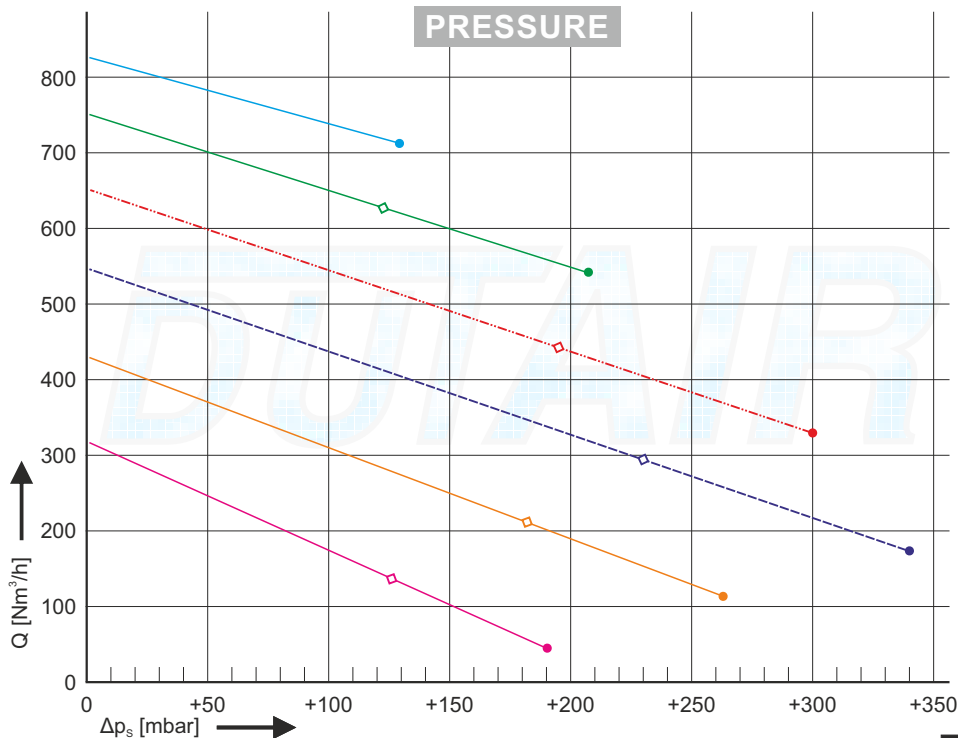
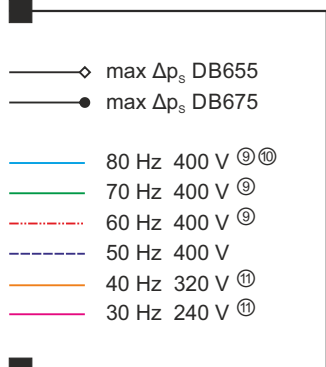
| | | DB655 | | DB675 | | DB600 |
|-------------------------------|-------|----------|----------|----------|----------|-------------|
| | | 50 Hz | 60 Hz | 50 Hz | 60 Hz | bare shaft |
| Power ^① | kW | 5.5 | 6.3 | 7.5 | 8.6 | max. 8.6 |
| Voltage Δ / Y ^② | V | 400/690 | 460/795 | 400/690 | 460/795 | - |
| Current Δ / Y | A | 10.6/6.1 | 10.1/5.8 | 14.0/8.1 | 13.3/7.7 | - |
| Revolutions | /min | 2925 | 3540 | 2925 | 3520 | 1750...4500 |
| Protection class ^③ | | IP55 | IP55 | IP55 | IP55 | - |
| PTC Thermistors ^④ | °C | 150 | 150 | 150 | 150 | - |
| Efficiency class ^⑤ | | IE2 | IE2 | IE3 | IE3 | - |
| Efficiency ^⑥ | % | 88.6 | 88.6 | 91.0 | 90.8 | - |
| Power factor | % | 88.6 | 88.1 | 89.5 | 89.3 | - |
| Sound pressure ^⑦ | dB(A) | 68.7 | 71.8 | 69.8 | 75.4 | - |
| Weight | kg | 80 | 80 | 87 | 87 | 56 |

^①see notes on page 7

DB655/675/600

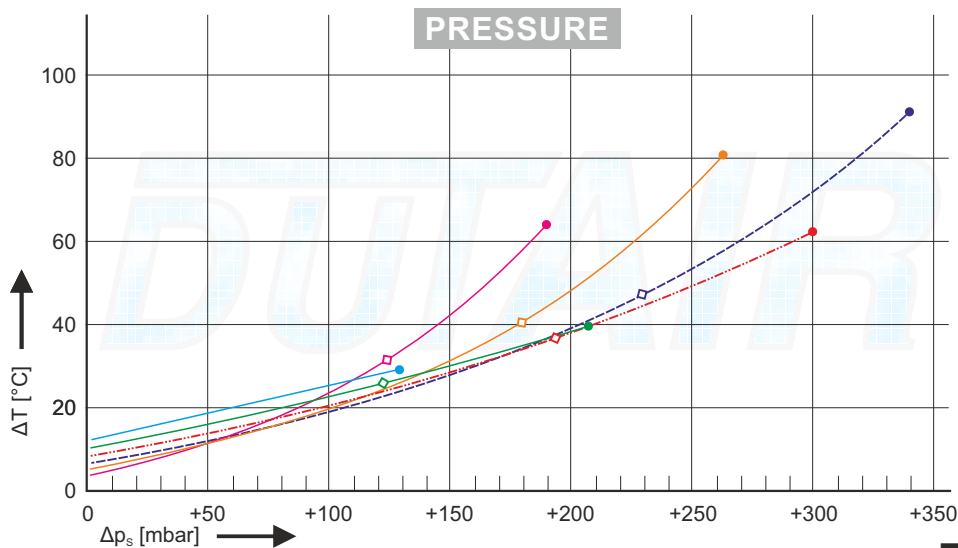
PERFORMANCE

Static pressure difference between in- and outlet Δp_s against airflow Q at an ambient condition of 1013 mbar and 20 °C. All duty points on characteristics curves are in thermal equilibrium[®]. Flow is rated in Nm³/h defined as air, 1013 mbar and 0 °C. Tolerance +/-3%. See notes on page 7.



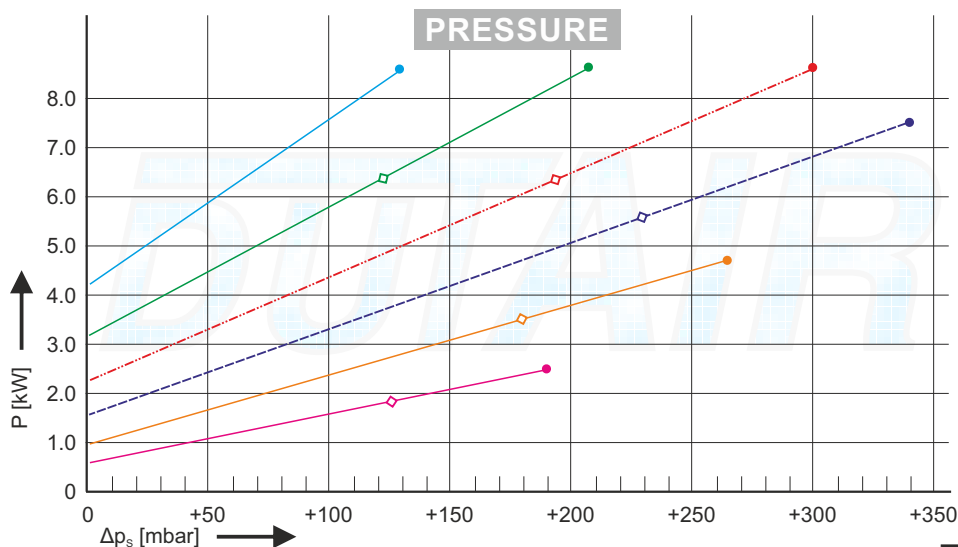
TEMPERATURE RISE

Temperature rise ΔT measured directly at in- and outlet. Ambient condition of 1013 mbar and 20 °C. All duty points on characteristics curves are in thermal equilibrium[®]. Tolerance +/-5 °C.



POWER

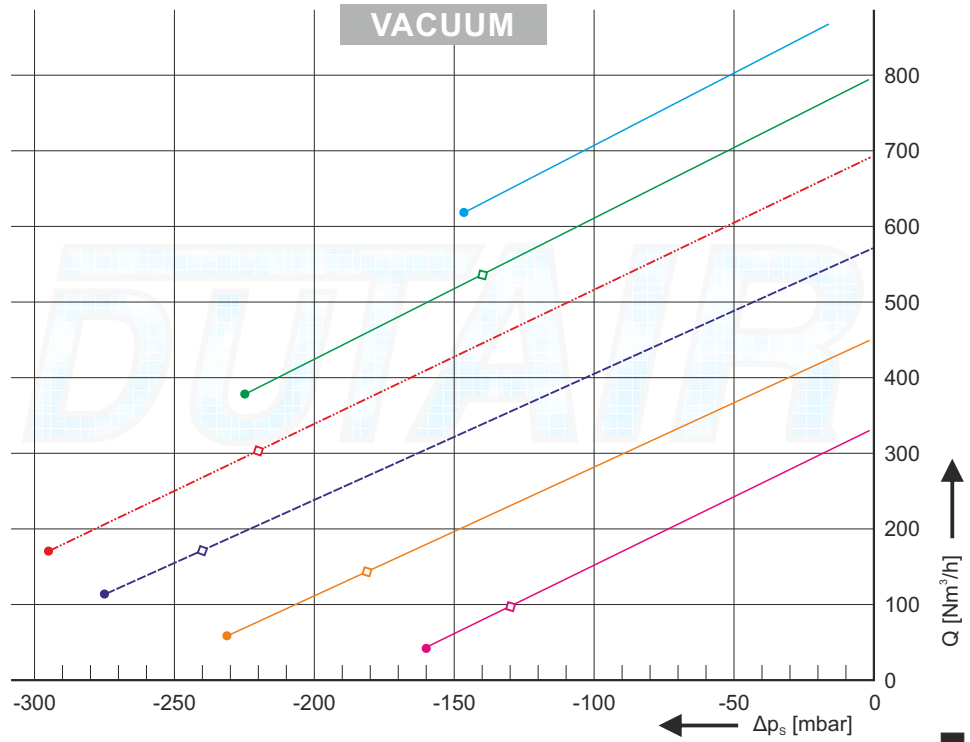
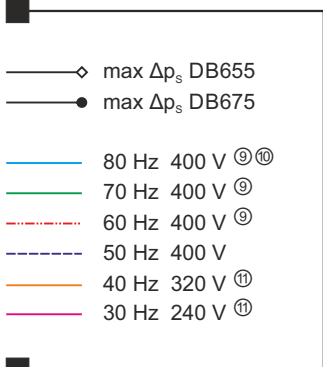
Motor power P delivered at impeller shaft. Ambient condition of 1013 mbar and 20 °C. All duty points on characteristics curves are in thermal equilibrium[®]. Tolerance +/-5 %. Accurate data on current consumption for specific duty points available on request.



DB655/675/600

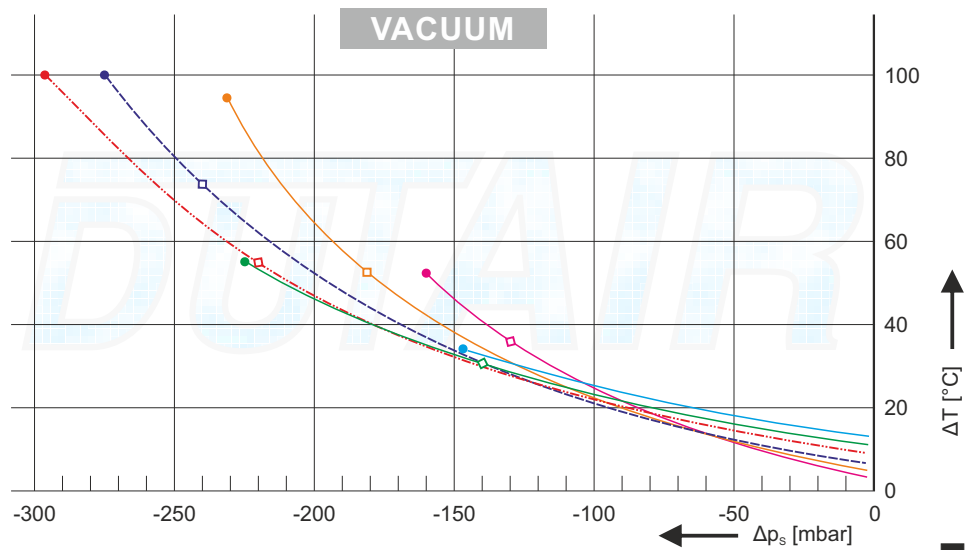
PERFORMANCE

Static pressure difference between in- and outlet Δp_s against airflow Q at an ambient condition of 1013 mbar and 20 °C. All duty points on characteristics curves are in thermal equilibrium[®]. Flow is rated in Nm³/h defined as air, 1013 mbar and 0 °C. Tolerance +/-3%. See notes on page 7.



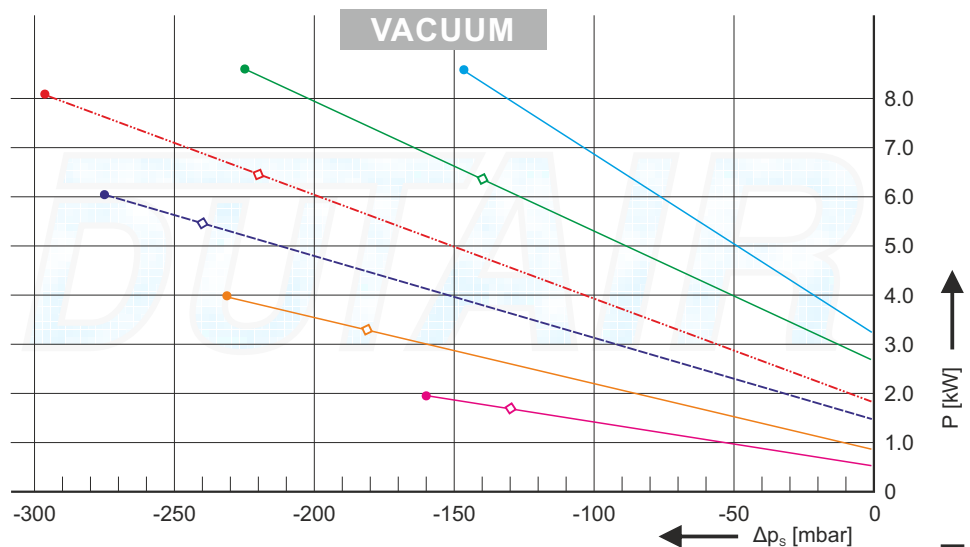
TEMPERATURE RISE

Temperature rise ΔT measured directly at in- and outlet. Ambient condition of 1013 mbar and 20 °C. All duty points on characteristics curves are in thermal equilibrium[®]. Tolerance +/-5 °C.



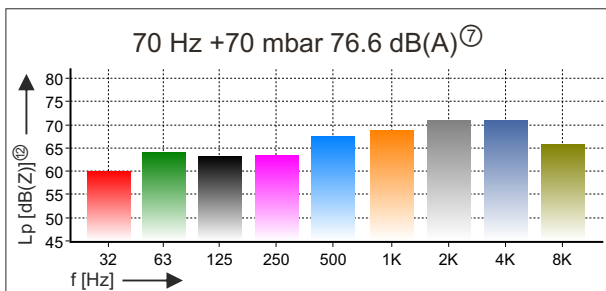
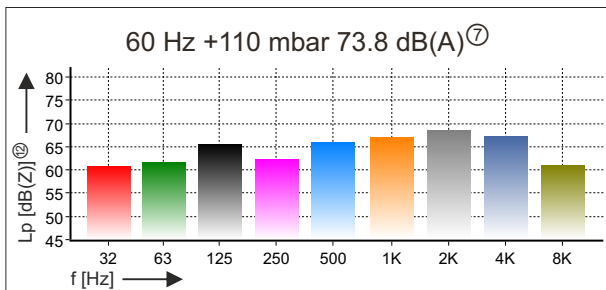
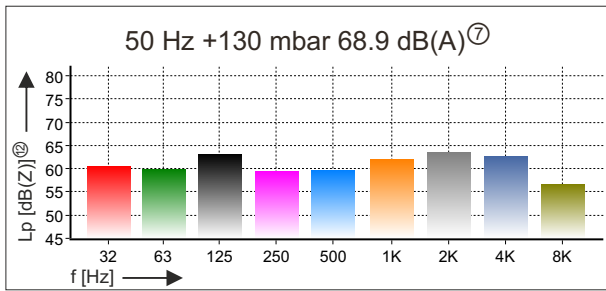
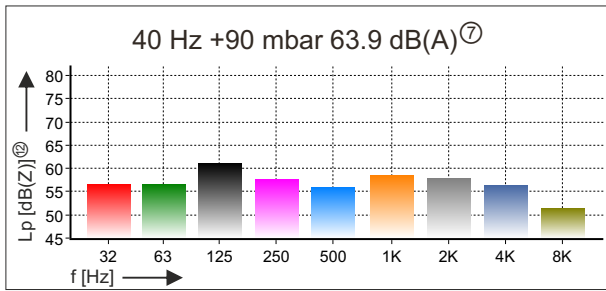
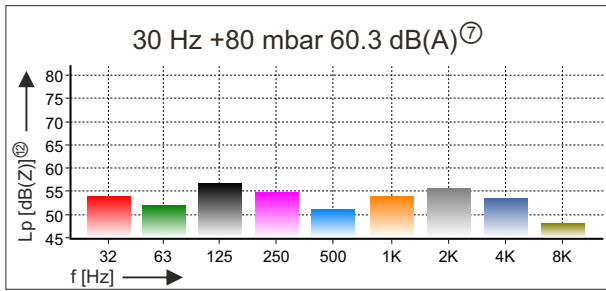
POWER

Motor power P delivered at impeller shaft. Ambient condition of 1013 mbar and 20 °C. All duty points on characteristics curves are in thermal equilibrium[®]. Tolerance +/-5%. Accurate data on current consumption for specific duty points available on request.

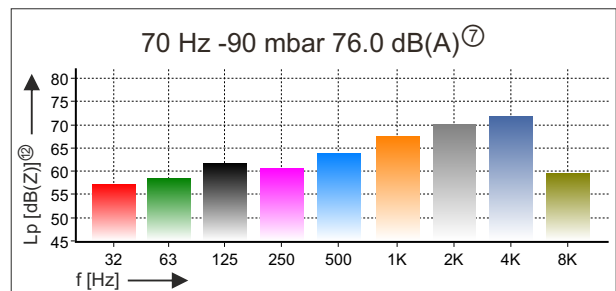
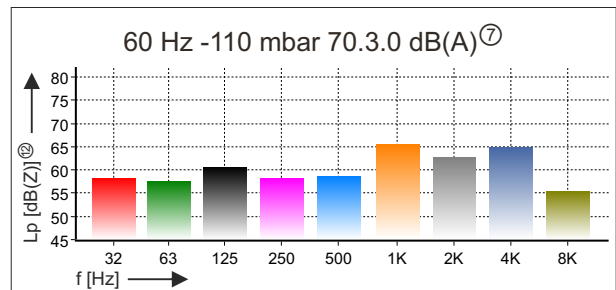
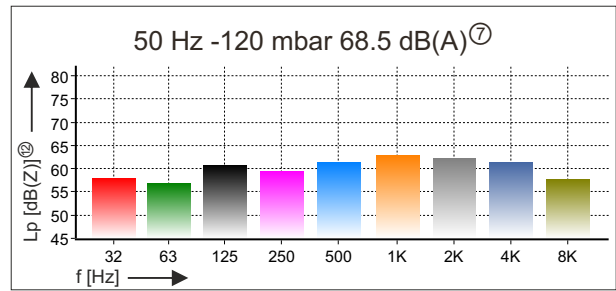
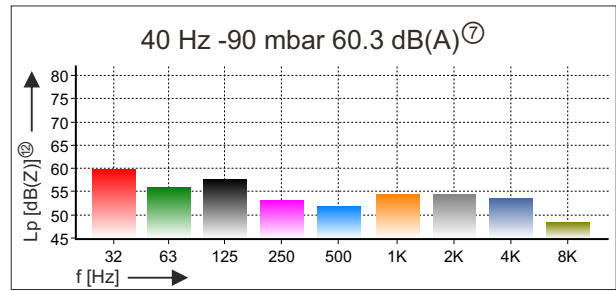
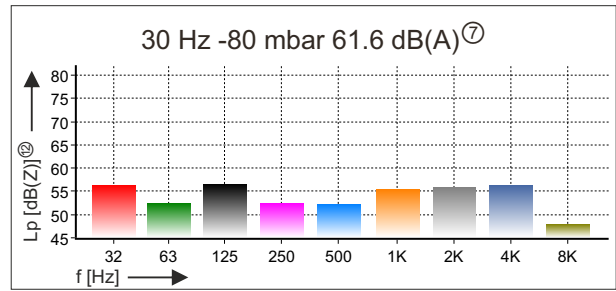


DB655/675/600

SOUND LEVEL PRESSURE DB655

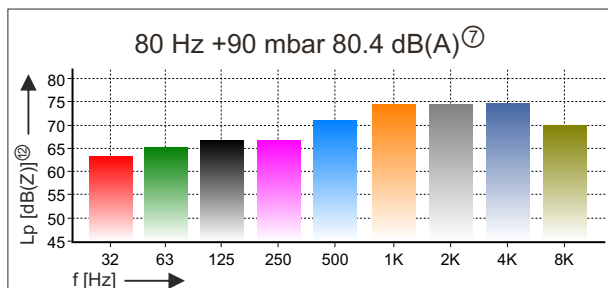
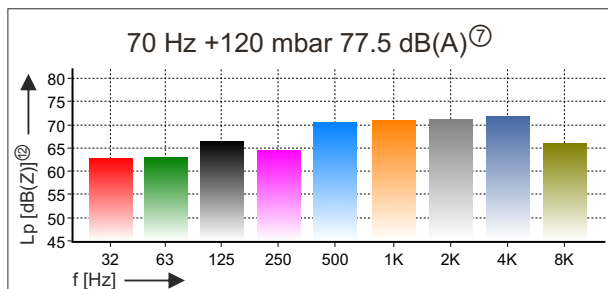
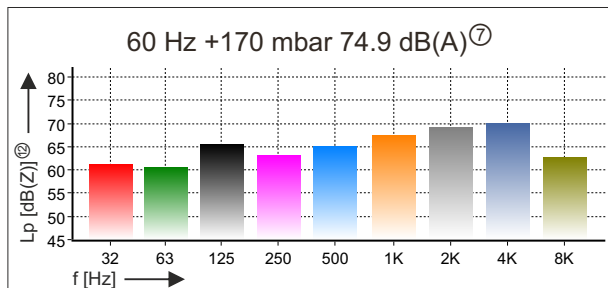
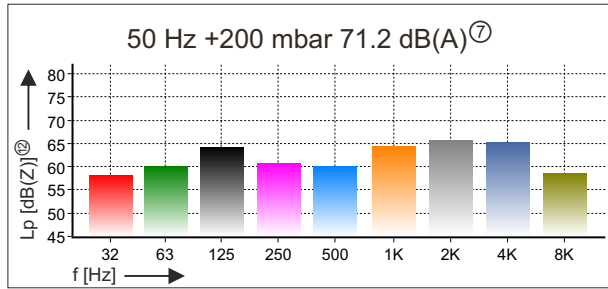
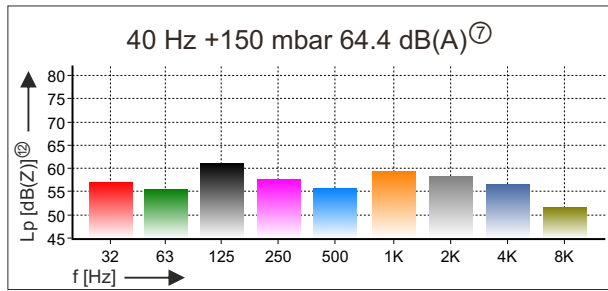
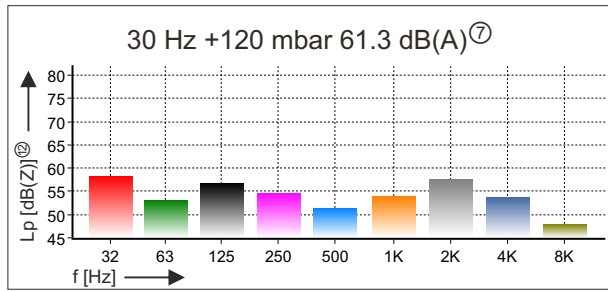


SOUND LEVEL VACUUM DB655

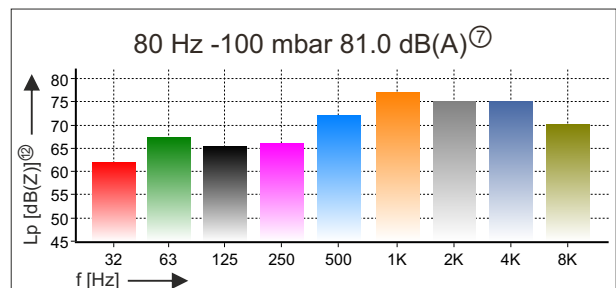
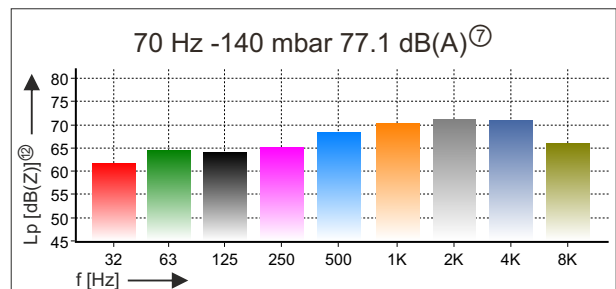
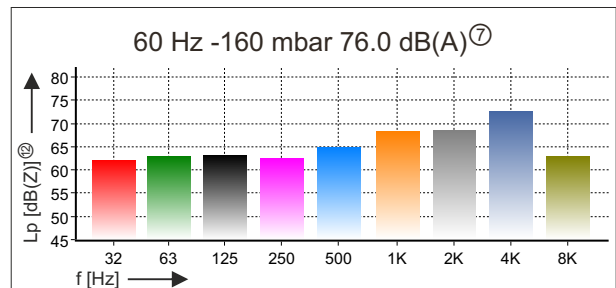
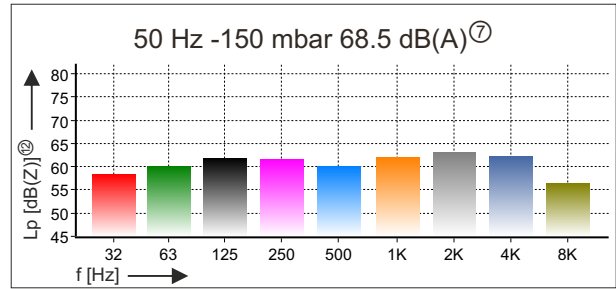
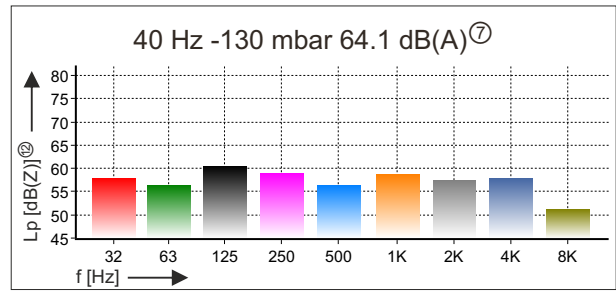
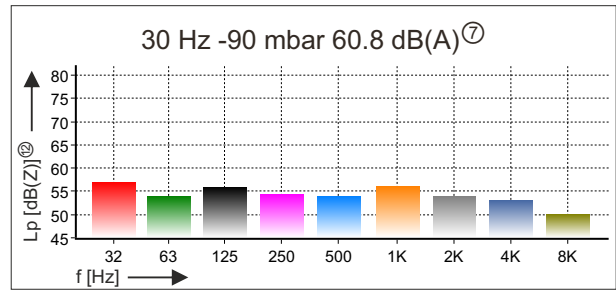


DB655/675/600

SOUND LEVEL PRESSURE DB675

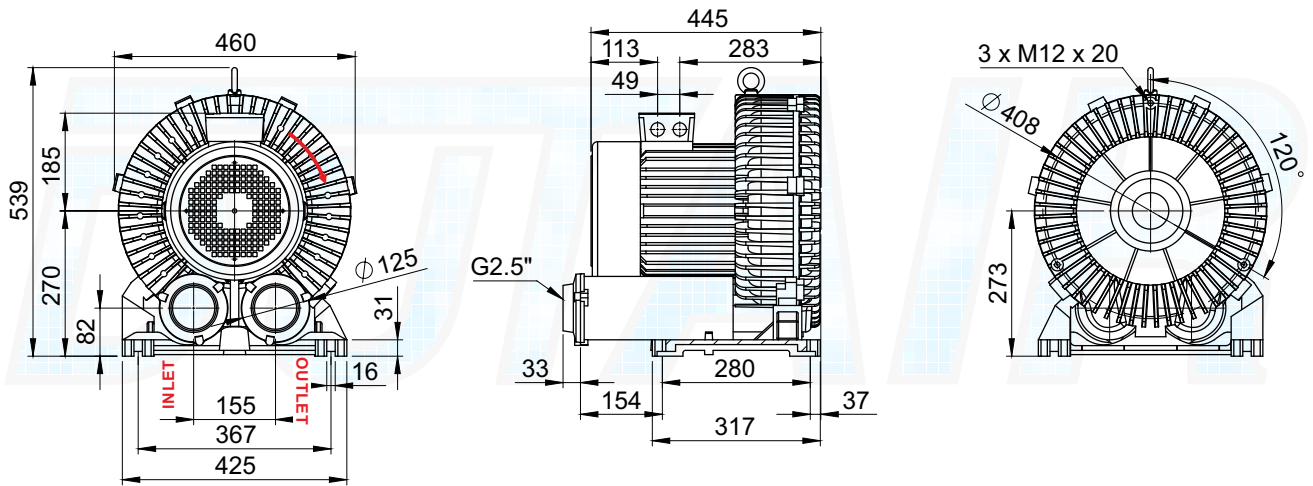


SOUND LEVEL VACUUM DB675

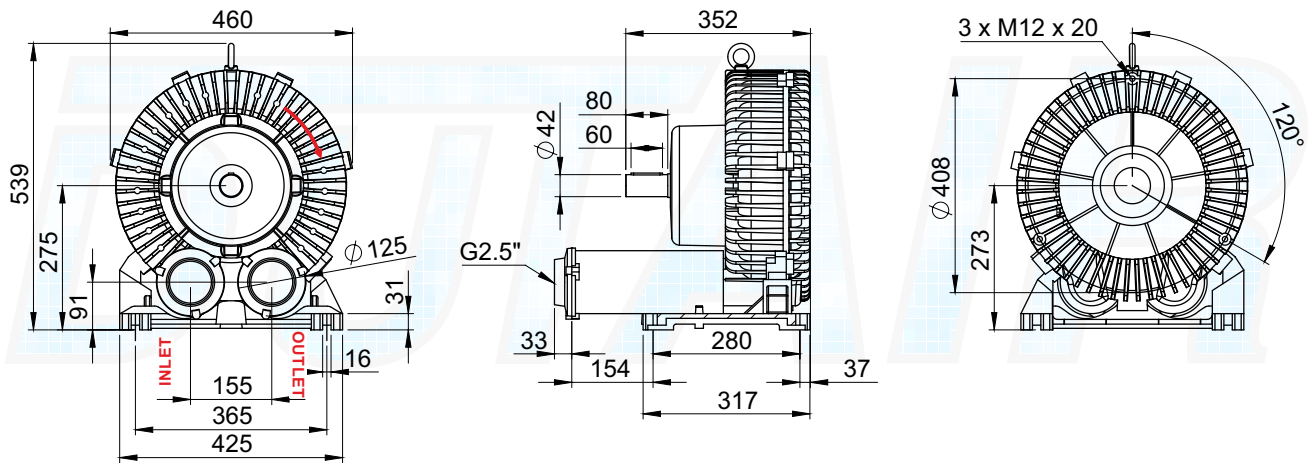


DB655/675/600

DIMENSIONS DB655/675



DIMENSIONS DB600



- all dimensions in mm except in- and outlet connection
- CAD models available in STEP format
- tolerance +/- 2 mm
- in case of discrepancy between dimensional drawing and CAD model, dimensions in dimensional drawing take precedence

DB655/675/600

ORDERING INFORMATION

| | | | | | | | | | | | | | | |
|-------------------------------------|---------------|--|-------------|------------|--|--|---|---|--|--|--|---|--|--|
| 53 | DB | S | 5 | 75 | U...-.. | ss | HT | RS | FE | IP56 | Q | G | Ex | C... |
| 51 : single phase / 53: three phase | Dutair Blower | S: Double stage serial blower P: Double stage parallel blower | Blower size | Motor size | Optional special motor voltage e.g. U500-50: 500 V at 50 Hz version | Optional bearing material ss: stainless steel | Optional bearing lubrication ^⑩ HT: high temp. / LT: low temp. | Optional bearing material RS: Improved resistance against moisture | Optional seal on motor shaft FE: PTFE seal / Vi: Viton seal | Optional motor protection: IP56 / IP65, for IP56 specific mounting position | Optional Q: anti condensation heating 230 V | Optional G: blower in gas-tight version available for single stage blowers | Optional ATEX non-sparking version ATEX Ex II Cat 3G/3D Ex-na | Optional painting: standard RAL7023 e.g. C7035: RAL7035 |

COMMENTS

WARNING: Comparing performance data can be misleading. Dutair specifications are based on a thermal equilibrium[®] for all duty points along the characteristics curves in this document. Many commercial based flow characteristics curves defined as m³/h air at 20 °C, 1013 mbar(a) and +/-10 % tolerance but can be up to 40 % higher than accurate characteristics curves defined as Nm³/h air at 0 °C, 1013 mbar(a), thermal equilibrium[®] duty points and +/-3 % tolerance as specified in this Dutair document.

The performance measurements are executed with instruments calibrated by DNV KEMA and are traceable to primary and/or internationally accepted measurement standards.

- ① Maximum shaft power allowed at continuous operation.
Rated output electric motor in accordance with NEN-EN-IEC 60034-1.
- ② Rated voltage for three phase triangle and star connection. Allowed supply voltage tolerance 5 %.
Consult your Dutair dealer for different supply voltages.
- ③ Protection class in accordance with NEN-EN-IEC 60034-5.
- ④ 3 pieces PTC thermistors connected in series fitted in each motor phase.
- ⑤ Efficiency classification in accordance with NEN-EN-IEC 60034-30.
- ⑥ Efficiency rated at 100% motor load.
- ⑦ Free field equivalent continuous sound pressure level A-weighted L_{eq}[dB(A)].
Unless specified L_{eq}[dB(A)] rated at 50 % of maximum pressure at 50 Hz. Tolerance +/- 2 dB(A).
Conditions as note ⑬.
- ⑧ Thermal equilibrium is the state reached when the temperature rises of several parts of the machine as well as the temperature rise between in- and outlet do not vary by more than a gradient of 2°C per hour.
- ⑨ Operation at 400 V within range of 60 to 80 Hz: 110 % of rated current at 50 Hz is allowed for 60 Hz power rating.
- ⑩ Characteristics for DB675 only.
- ⑪ Maximum performance at 30 & 40 Hz is limited by temperature rise as well as current. At 30 Hz 60 % and at 40 Hz 80 % of nominal motor current.
- ⑫ Free field class 1 octave band measurements in accordance with IEC 61260 unweighted L_p[dB(Z)].
Tolerance +/- 5 dB(Z). Conditions as note ⑬.
- ⑬ Measurements at 1 m distance with in- and outlet duct connected to the blower on a reflective surface.
Class 1 sound level meter Delta Ohm HD2010UC/A according to IEC 61672-1.
Acoustic calibration prior to measurements with class 1 calibrator HD2020ACC according to IEC 60942.
- ⑭ Standard ambient temperature range -20...+40°C.