



MULTI-PROCESS DRY PUMPS
ADP/ADS SERIES TWO



Multi-process dry pumps for the semiconductor industry

With a long history of innovation and exacting standards, Alcatel Vacuum Technology today offers a range of products adapted to various and multiple applications.

Alcatel products are compact, easy to use and maintain, and renowned for their robustness and efficiency. In addition to superior performance, Alcatel products have a low cost-of-ownership and quality technical support available worldwide.

With more than 15 years of experience in the semiconductor industry, the Adixen ADP/ADS Series Two offers high efficiency in all dry pumping applications.

The design of the Series Two brings high benefits for applications where cleanliness and reliability are key features.

The Series Two family covers a large range of vacuum requirements with 4 models. These models can be chosen in LM versions for clean applications, P versions for light/medium applications, and H for harsh applications.

Many major manufacturers from the Semiconductor industry have already selected this product. This choice allows them to reduce unscheduled downtime, to reduce overall running cost and increase profitability.

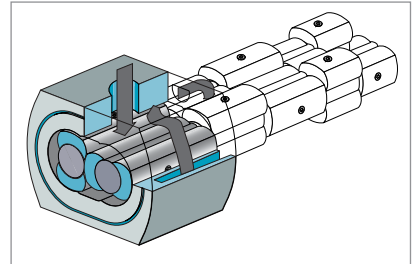


Series Two range

Features and benefits

HIGH RELIABILITY TO PROCESS

- Wide interstage channels are able to accommodate large quantities of powder and particles.
- High operating temperature with a precise closed-loop temperature management system, and a linear increase of gas temperature from inlet to outlet.
- Vertical pumping on each stage which prevents particulate accumulation in the swept volume.



Pump cutaway :
Basic pumping principle for high reliability.

SEMICONDUCTOR FAB RULES COMPLIANT

- Compact: The series 2 model is only 390 mm wide.
- Clean: Alcatel technology is a frictionless and oil-free pump mechanism. There is no risk of particulate contamination.
- Quiet: All models include an integrated silencer, eliminating the need for an additional external silencer.
- Semi S2 compliant.



Series 2 pumps are easy to install and maintain in a fab basement. Special frames can be proposed to adapt to your configuration.





LOW COST OF OWNERSHIP

- Low power consumption at working pressures and at Ultimate Pressure.
- With moderate heat generation, series 2 water consumption is extremely low.
- Nitrogen Purge level is easily set by the customer. Pumps for clean applications do not require any purge.



Power consumption, Nitrogen consumption and other parameters can be monitored from the fab network with Adixen Control and Monitoring Network.

Range description

| | | LM | P | H |
|---------------------------------------|---|---|---|---|
| | | LOAD LOCK TRANSFER CHAMBER PVD SPUTTERING | ASHING - STRIPPING - DIELECTRIC, POLY ETCH - IMPLANT SOURCE - MEDIUM CVD | PECVD LPCVD |
| Pumping speed Range | | | | |
| 100 m ³ /h 2 000 l/mn |  | ADP 122 LM Best performance in its category | ADP 122 P The right choice to back a turbo pump for many applications | ADP 122 H <i>Designed for high reliability: special materials, special seals and enhanced purge cir- cuit</i> |
| 600 m ³ /h 10 000 l/mn |  | ADS 602 LM Very fast pump down | ADS 602 P The reference for medium CVD and Etch applications | ADS 602 H Proven reliability with most corrosive gases |
| 1200 m ³ /h 20 000 l/mn |  | <i>Low power consumption No nitrogen purge needed</i> | ADS 1202 P For applications that need high throughput with low C.O.O. | ADS 1202 H Best lifetime on Harsh LPCVD nitride furnaces |
| 1800 m ³ /h 30 000 l/mn |  | <i>Robust mechanical design for heavy cycling</i> | ADS 1802 P The smallest footprint for a 30 000 l/mn pump | ADS 1802 H Dedicated to high throughput applications such as 300 mm batch furnaces |
| | | | <i>Low C.O.O. due to low power consumption at working pressures</i> | |

Technical data

| 60 Hz | Units | ADP 122 | ADS 602 | ADS 1202 | ADS 1802 |
|--|-------------------|------------------------|------------------------|------------------------|------------------------|
| Peak pumping speed | m ³ /h | 112 | 560 | 1150 | 1700 |
| | cfm | 65.8 | 329 | 676 | 1000 |
| | l/mn | 1867 | 9333 | 19167 | 28333 |
| Typical ultimate pressure (no purge) * | mbar | 9 x 10 ⁻³ | 5 x 10 ⁻⁴ | 5 x 10 ⁻⁴ | 5 x 10 ⁻⁴ |
| | torr | 6.7 x 10 ⁻³ | 3.7 x 10 ⁻⁴ | 3.7 x 10 ⁻⁴ | 3.7 x 10 ⁻⁴ |
| Max. ultimate pressure (no purge) | mbar | 1.5 x 10 ⁻² | 9 x 10 ⁻⁴ | 9 x 10 ⁻⁴ | 9 x 10 ⁻⁴ |
| | torr | 1.1 x 10 ⁻² | 6.7 x 10 ⁻⁴ | 6.7 x 10 ⁻⁴ | 6.7 x 10 ⁻⁴ |
| Ultimate pressure (35 SLM purge) | mbar | 5 x 10 ⁻² | 6 x 10 ⁻³ | 6 x 10 ⁻³ | 6 x 10 ⁻³ |
| | torr | 3.7 x 10 ⁻² | 4.5 x 10 ⁻³ | 4.5 x 10 ⁻³ | 4.5 x 10 ⁻³ |
| Power at ultimate | kW | 1.5 | 2 | 3.2 | 3.5 |
| Motor rating | kW | 1.5 | 3 | 5.2 | 7.5 |

| 50 Hz | | | | | |
|--------------------------------------|-------------------|------------------------|------------------------|------------------------|------------------------|
| Peak pumping speed | m ³ /h | 95 | 480 | 1050 | 1700 |
| | cfm | 55.8 | 282 | 617 | 1000 |
| | l/mn | 1583 | 8000 | 17500 | 28333 |
| Typical ultimate pressure (no purge) | mbar | 1 x 10 ⁻² | 8 x 10 ⁻⁴ | 8 x 10 ⁻⁴ | 8 x 10 ⁻⁴ |
| | torr | 7.5 x 10 ⁻³ | 6 x 10 ⁻⁴ | 6 x 10 ⁻⁴ | 6 x 10 ⁻⁴ |
| Max. ultimate pressure (no purge) | mbar | 3 x 10 ⁻² | 2 x 10 ⁻³ | 2 x 10 ⁻³ | 9 x 10 ⁻⁴ |
| | torr | 2.2 x 10 ⁻² | 1.5 x 10 ⁻³ | 1.5 x 10 ⁻³ | 6.7 x 10 ⁻⁴ |
| Ultimate pressure (35 SLM purge) | mbar | 9 x 10 ⁻² | 9 x 10 ⁻³ | 9 x 10 ⁻³ | 6 x 10 ⁻³ |
| | torr | 6.7 x 10 ⁻² | 6.7 x 10 ⁻³ | 6.7 x 10 ⁻³ | 4.5 x 10 ⁻³ |
| Power at ultimate | kW | 1.3 | 1.8 | 3 | 3.5 |
| Motor rating | kW | 1.5 | 3 | 5.2 | 7.5 |

| | | | | | | |
|---------------------------------|--|----------|----------|----------|----------|------|
| Cooling water, quick connectors | | 1/4" NPT | 1/4" NPT | 1/4" NPT | 1/4" NPT | |
| Cooling water typical | l/mn | 1 | 1 | 1.3 | 5 | |
| | gal/mn | 0.26 | 0.26 | 0.34 | 1.1 | |
| Inlet connection | ISO-K / KF | DN 50 | DN 100 | DN 100 | DN 100 | |
| Outlet connection | ISO-KF | DN 40 | DN 40 | DN 40 | DN 40 | |
| Weight | kg | 243 | 378 | 522 | 540 | |
| | lbs | 540 | 840 | 1160 | 1190 | |
| Dimensions | Length | mm | 830 | 830 | 995 | 1110 |
| | Width | mm | 390 | 390 | 390 | 390 |
| | Height | mm | 580 | 875 | 985 | 985 |
| | Length | inches | 32.7 | 32.7 | 39.2 | 43.7 |
| | Width | inches | 15.4 | 15.4 | 15.4 | 15.4 |
| | Height | inches | 22.8 | 34.4 | 38.8 | 38.8 |
| N2 purge | 0 for LM versions, depends on application for P and H versions | | | | | |

* Represents about 80% of pumps manufactured.

Ordering information

Ordering P/N

All series Two models include as standard equipment the required dry pumps and associated blowers, water cooled motors, advanced electronic monitoring with facilities for communication, and sensors for safe pump operation.

| | 200/208 V 60 Hz | 380/400 V 50 Hz | 480 V 60 Hz | 200/208 V 50 Hz |
|------------|-----------------|-----------------|----------------|-----------------|
| ADP 122 LM | P5WW100000202 | P5WW300000202 | P5WW600000202 | P5WW700000202 |
| ADP 602 LM | P6WW100001202 | P6WW300001202 | P6WW600001202 | P6WW700001202 |
| ADP 122 P | P1WW100000102 | P1WW300000102 | P1WW600000102 | P1WW700000102 |
| ADS 602 P | P2WW100001102 | P2WW300001102 | P2WW600001102 | P2WW700001102 |
| ADS 1202 P | P3WW100000102 | P3WW300000102 | P3WW600000102 | P3WW700000102 |
| ADS 1802 P | P10WW100000102 | P10WW300000102 | P10WW600000102 | P10WW700000102 |
| ADS 602 H | P7WW100011302 | P7WW300011302 | P7WW600011302 | P7WW700011302 |
| ADS 1202 H | P8WW100010302 | P8WW300010302 | P8WW600010302 | P8WW700010302 |
| ADS 1802 H | P9WW100010302 | P9WW300010302 | P9WW600010302 | P9WW700010302 |

- Suggested part numbers (above) are pumps equipped with a plug for main power connection, no power failure protection, no exhaustable covers, no hand held display and exhaust at rear.
- Power failure protection, exhaustable covers and hardwire connection are proposed as options (specific part numbers).
- A hand held display is available as an accessory for the setting of internal parameters and to display status information of the pump.

LM models for clean applications do not require any purge system.

P models for light/medium applications include as standard equipment a system with precise purge flow control and temperature management.

H models for harsh applications include as standard equipment an enhanced full purge system, temperature management, heating jackets on the exhaust piping and is constructed with special materials to resist the harshest semiconductor applications.

Accessories

| Description | P/N | P/N | P/N |
|---|------------------|------------------|------------------------------------|
| Inlet isolation valve | Manual operation | 24V AC operation | Cable 3.5 meters for 24V operation |
| Aluminium body for clean application DN50 ISO-KF | 30384M | 30384E | 108119 |
| Stainless steel body for all applications DN50 ISO-KF | 30501M | 30501E | 108120 |
| Stainless steel body for all applications DN100 ISO-K | 30503M | 30503E | 106532 |

Manual or electro-pneumatically operated isolating valves



OEM interface

| Description | P/N |
|---------------|--------------------------------------|
| OEM interface | on request (depending on tool model) |



Cold trap

| Description | P/N |
|--|--------|
| Exhaust Cold trap for pumps powered with 200/208 V (*) | 802099 |
| Exhaust Cold trap for pumps powered with 380/480 V (*) | 802100 |

(*) available only for horizontal exhaust



Network historical data

| Description | P/N |
|----------------------------|------------|
| Network supervision system | on request |

| Description | P/N |
|----------------|---|
| Stacking frame | on request (depending on number of pumps) |

Stacking frame are proposed as accessories to reduce footprint with utilization of Stand-alone pumps. A centralized utilities connection is also proposed for faster hook-up on site. The frame can be used for 2, 4 or 6 pumps.

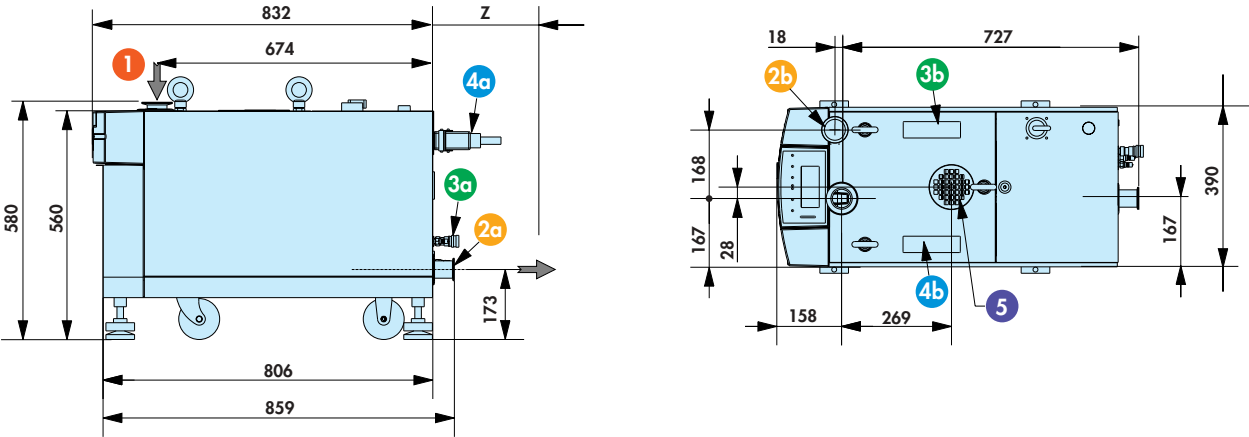
| Description | P/N |
|----------------------------------|---------|
| Set of two anti seismic brackets | A328947 |

| Description | P/N |
|-------------------|--------|
| Hand held display | 110942 |

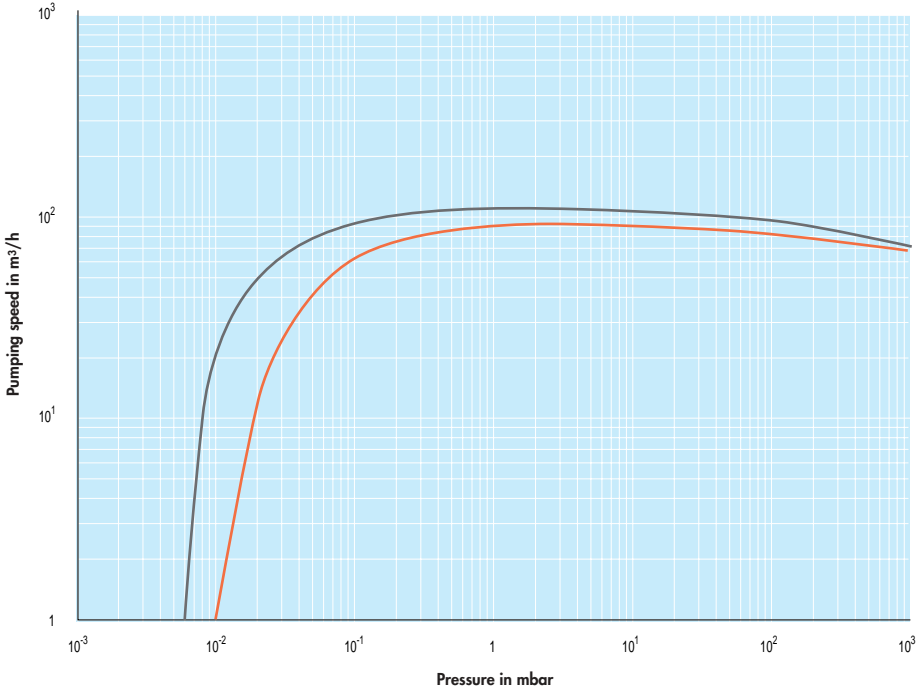
Hand-held remote control



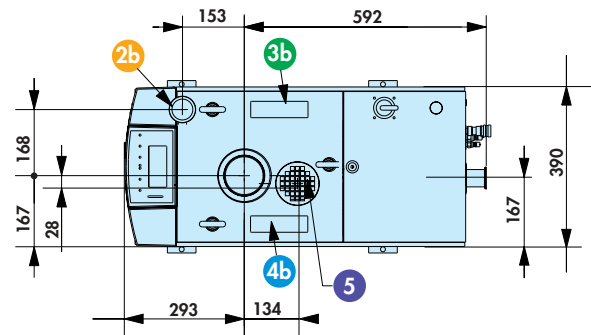
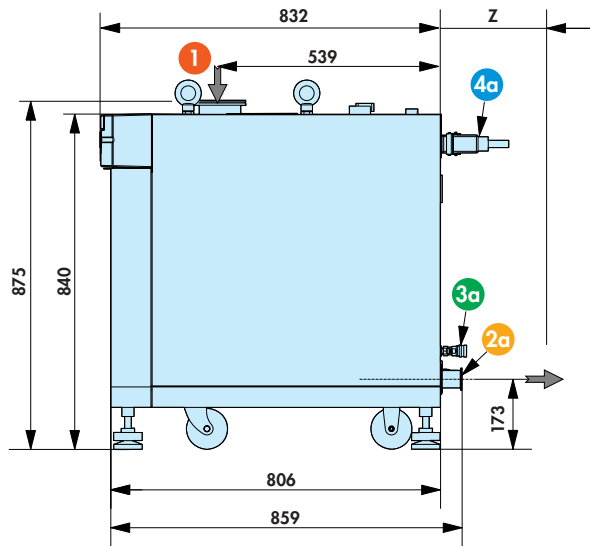
ADP 122 pumping curves and dimensions



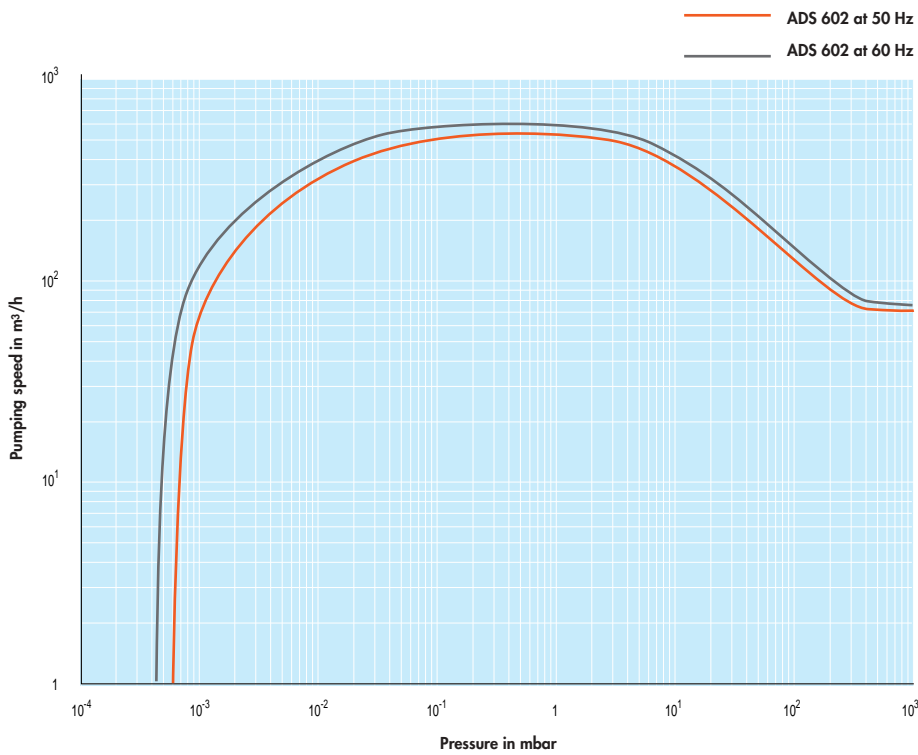
— ADP 122 at 50 Hz
— ADP 122 at 60 Hz



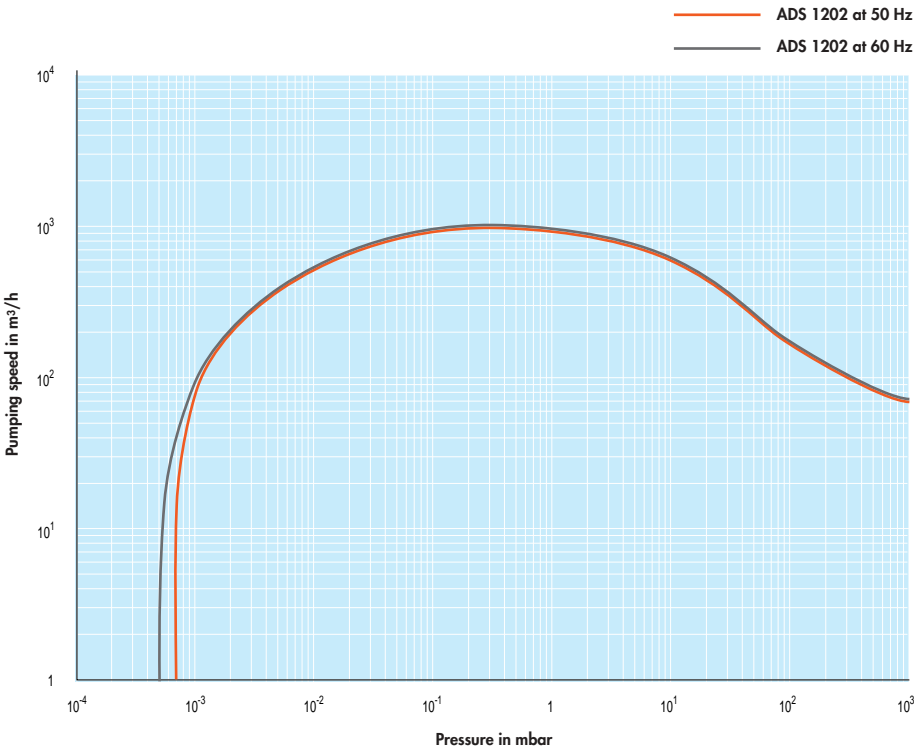
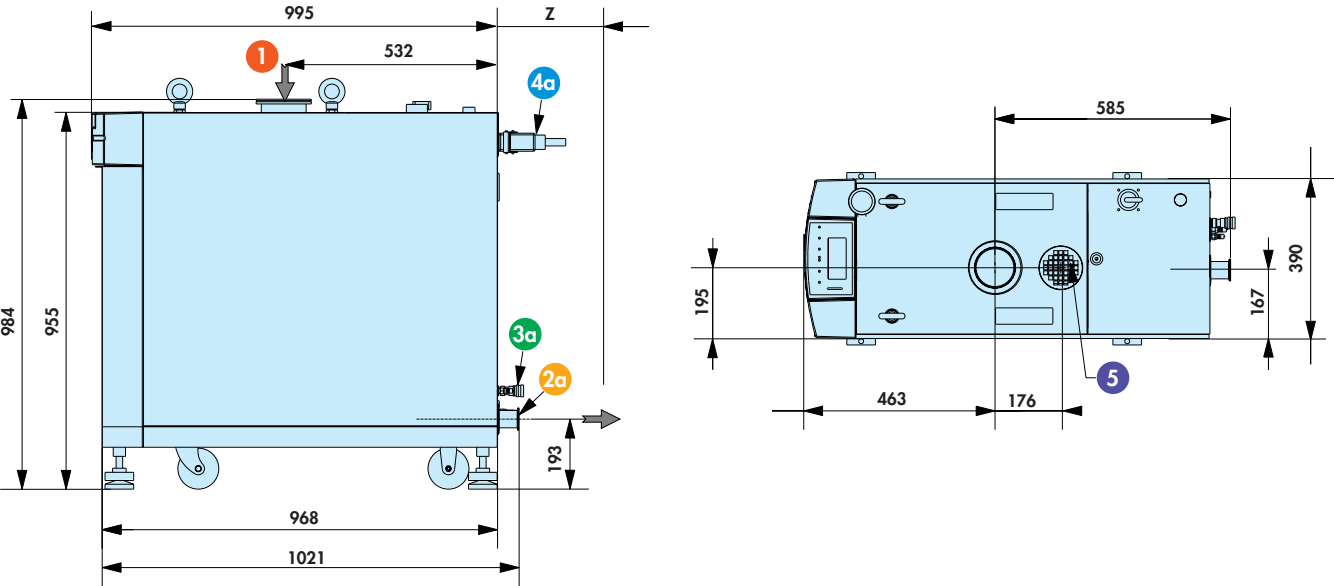
ADS 602 pumping curves and dimensions



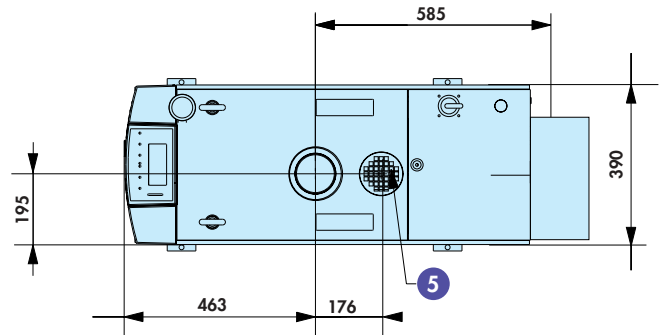
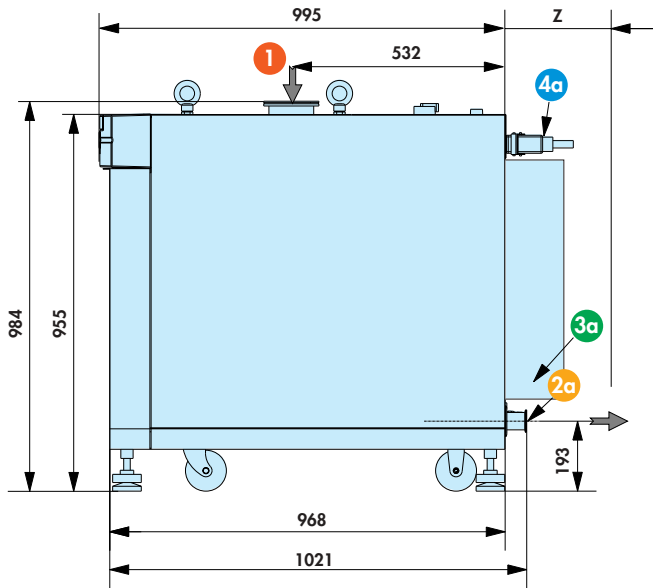
- 1** Inlet
- 2a** Exhaust position
- 2b** Alternative exhaust position
- 3a** Water/N₂ utilities position
- 3b** Alternative water/N₂ utilities connection
- 4a** Main power position
- 4b** Alternative main power position
- 5** Exhaustable cover connection
Ø : 100 mm



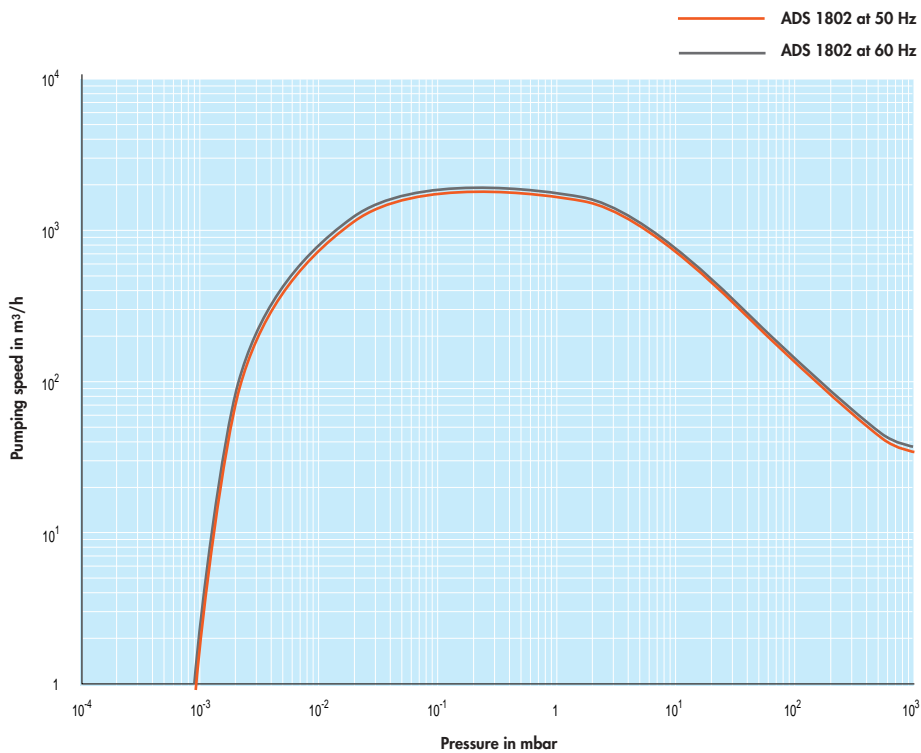
ADS 1202 pumping curves and dimensions



ADS 1802 pumping curves and dimensions



- 1** Inlet
- 2a** Exhaust position
- 3a** Water/N₂ utilities position
- 4a** Main power position
- 5** Exhaustable cover connection
Ø : 100 mm



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