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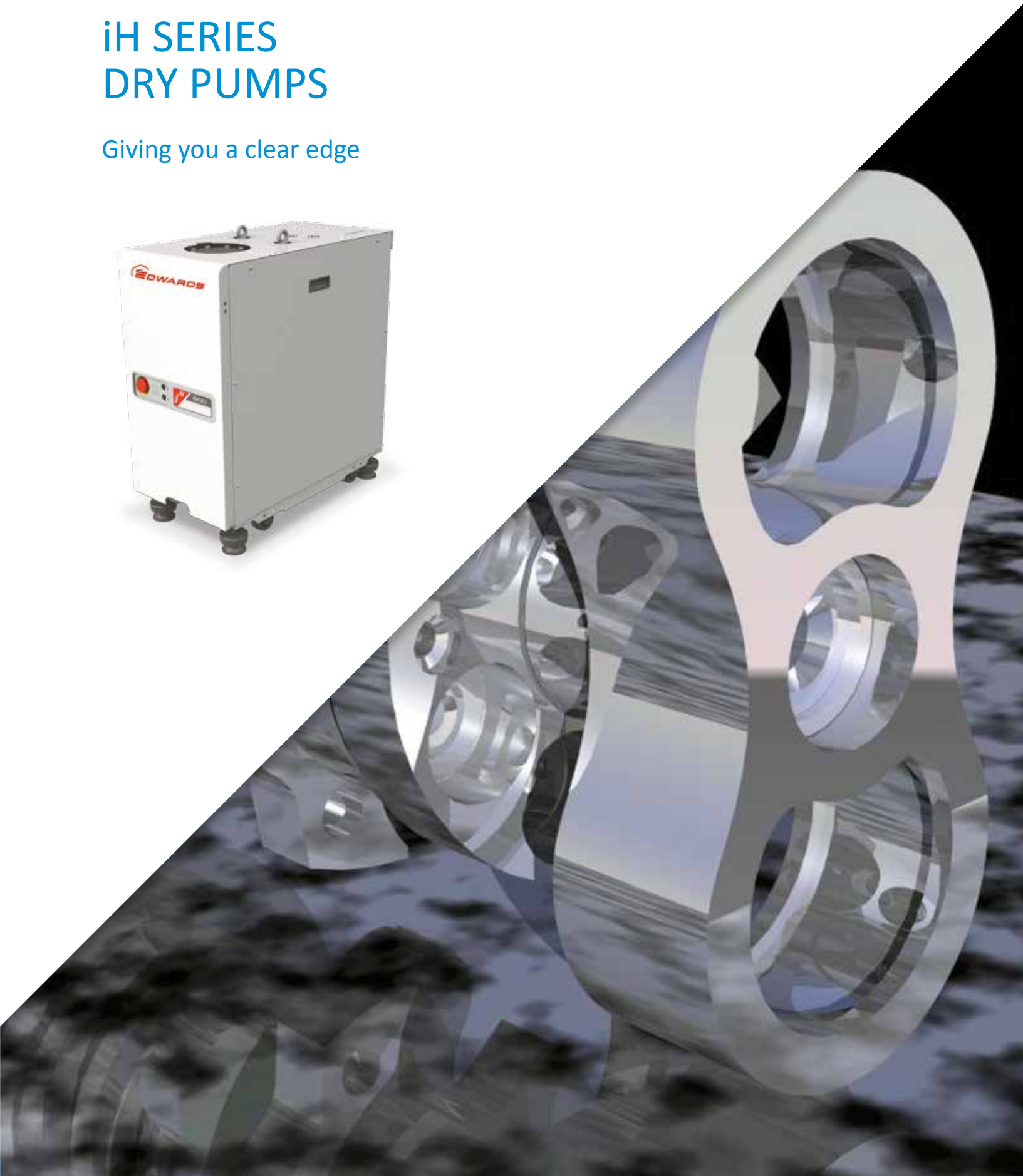
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iH SERIES DRY PUMPS

Giving you a clear edge





A CLEAR EDGE IN PRODUCT INNOVATION

Pumping expertise

Proven design

Low cost of ownership

Optimised footprint

iH series dry pump first choice for vacuum solutions

Edwards is a leading supplier of integrated process-enabling technologies, materials and services for semiconductor and Flat Panel Display (FPD) processes.

Products include vacuum pumps, exhaust gas management, liquid abatement, and monitoring and control equipment. An extensive range of services includes equipment repair, and on-site materials and equipment support.

Edwards has over 200,000 pumps installed, supporting 200 mm and 300 mm fabs worldwide and operates in every major semiconductor manufacturing region. Edwards advanced semiconductor vacuum pumps have been field-proven to perform to the highest operating standards. Reliability and high performance are achieved by extending service life, improving uptime and increasing productivity, while minimising footprint and cost of ownership.

The iH Series offers high reliability for difficult processes, such as PECVD and LPCVD, where particulate, condensable and corrosive by-products are present. iH dry pumps are available in a range of peak speeds, from 80 to 1800 m³/h. iH1800 dry pumps are specifically designed for high-throughput applications.

Semiconductor Industry Standards Compliance

The iH series dry pumps comply with internationally recognised semiconductor industry standards:

SEMI® S2 (Semiconductor Equipment and Materials International), ETL (Energy Technology Laboratories), which conforms to UL Standard 3101-1 and CE Mark (European Community Mark).

Benefits

Pumping expertise and leadership

Edwards is the global market leader for advanced vacuum pumps, supplying over 40% of the pumps currently installed in 300 mm fabs. With more than 200,000 Edwards dry pumps supplying vacuum on 200 mm and 300 mm processes, reliability has been proven.

Proven design

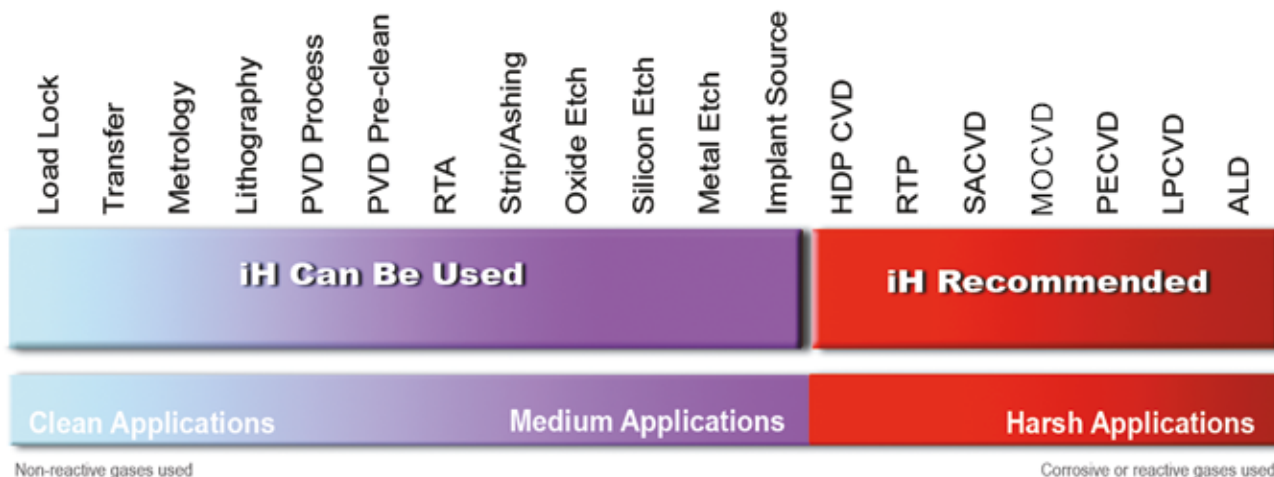
The iH Series has been designed with cantilevered shafts and specially profiled rotors for better handling of particles. Reserve motor power also maximises reliability on harsh-duty CVD applications. Corrosion resistant materials allow pumping of corrosive gases while higher operating temperatures provide ample margin to prevent gas condensation.

Low cost of ownership

The iH Series minimises ownership costs through optimised utilities consumption and with no preventative maintenance required. High operating temperatures minimise the amount of N₂ dilution required and the absence of greased bearings eliminates the need for intervention between overhauls.

Optimised footprint

The one-piece shaft eliminates the need for a motor coupling and a fifth pumping stage removes the need for a silencer and eliminates particle accumulation, both reducing the overall footprint.



Range of pumps

The iH Series is the product of over 30 years dry vacuum pump expertise and field experience. iH dry pumps are the preferred pumps for many 200 and 300 mm production lines. iH pumps provide application-specific solutions for the full range of semiconductor fabrication processes.

The major OEMs recommend iH Series dry pumps for harsh processes.

The optional Tool and Network Interface Modules (iTIM and NIM) allow control by any OEM tool and fabwide monitoring using FabWorks IMS maximises equipment availability.

iH1800 and iH1800HTX

The iH1800 dry pumps are designed to provide high throughput pumping for harsh 300 mm process applications.

The iH1800HTX is specifically designed for processes such as 300 mm LPCVD Nitride, where higher operating temperatures are required to prevent process gas condensation.



iH80



iH600



iH1800

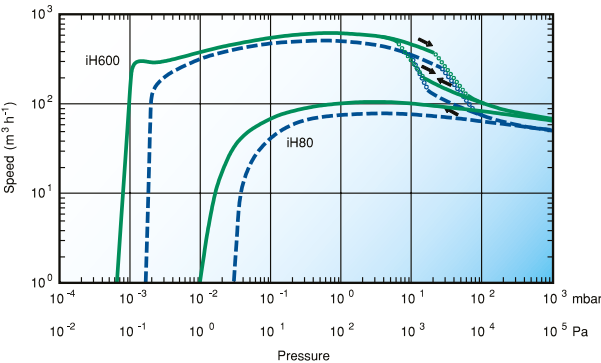
Technical data

		iH80		iH600		iH1000	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Peak speed	m ³ h ⁻¹	86	103	518	600	950	1000
	cfm	51	61	305	353	560	589
	l min ⁻¹	1433	1717	8635	10000	15837	16670
Ultimate pressure (typical with shaft seals purge only)	mbar	3 x 10 ⁻²	1 x 10 ⁻²	2 x 10 ⁻³	7 x 10 ⁻⁴	2 x 10 ⁻³	1 x 10 ⁻³
	Torr	2.3 x 10 ⁻²	7.5 x 10 ⁻³	1.5 x 10 ⁻³	5.3 x 10 ⁻⁴	1.5 x 10 ⁻³	7.5 x 10 ⁻⁴
	Pa	3	1	0.2	0.07	0.2	0.1
Typical purge flow	slm	4-44	4-44	4-44	4-44	4-44	4-44
Inlet connection		ISO63	ISO63	ISO100	ISO100	ISO100	ISO100
Outlet connection		NW40	NW40	NW40	NW40	NW40	NW40
Typical cooling water flow at 15 psi pressure drop	l h ⁻¹	120	120	240	240	240	240
	l min ⁻¹	2	2	4	4	4	4
Weight	kg	240	240	415	415	430	430
Power at ultimate ⁽¹⁾	kW	2.3	2.6	3.0	3.3	3.4	3.7
Rated motor power	kW	2.9	3.5	5.1	6.1	5.1	6.1
Oil capacity	l	0.7	0.7	1.43	1.43	1.48	1.48

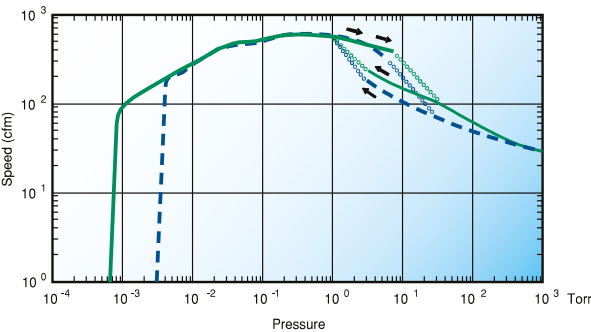
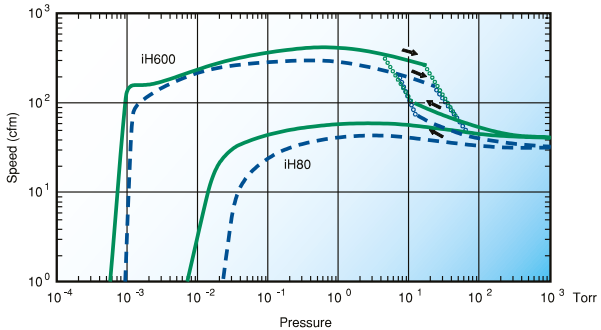
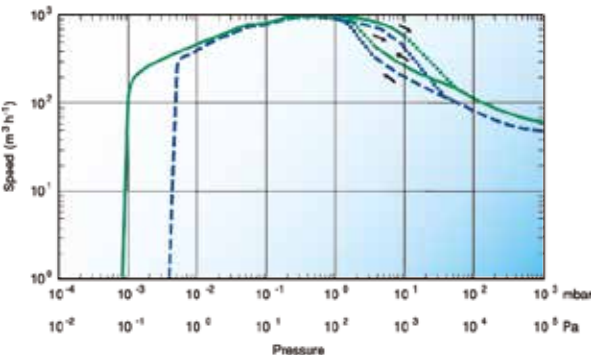
All figures are typical without gas ballast
 (1) Average power at 700T exhaust pressure

Speed curves

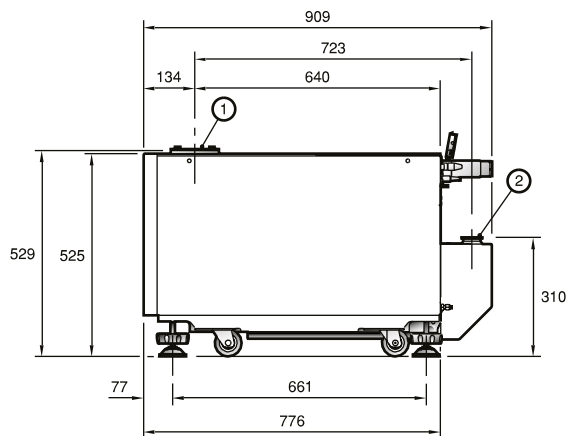
iH80 and iH600



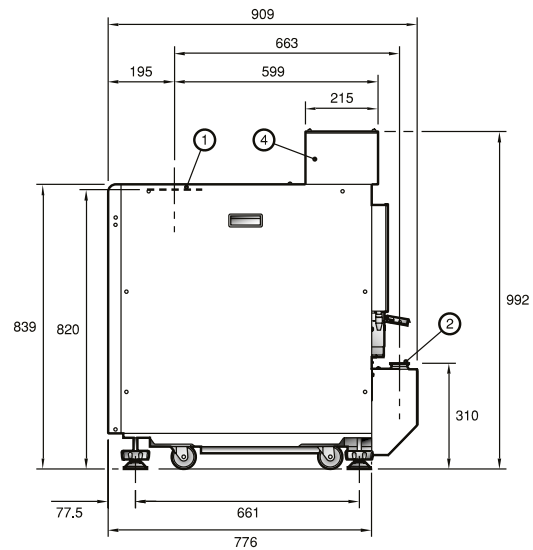
iH1000



Dimensions



iH80



iH600 & iH1000



iH80

- 1 INLET
- 2 OUTLET
- 3 AIR EXTRACTION PORT
- 4 INVERTER BOX (iH1000 only)
- A SIDE VIEW
- B PLAN VIEW



iH600

Technical data

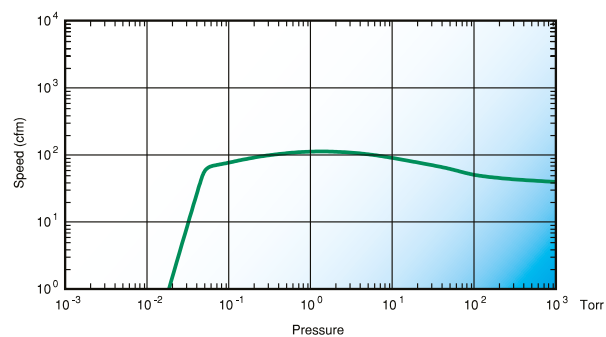
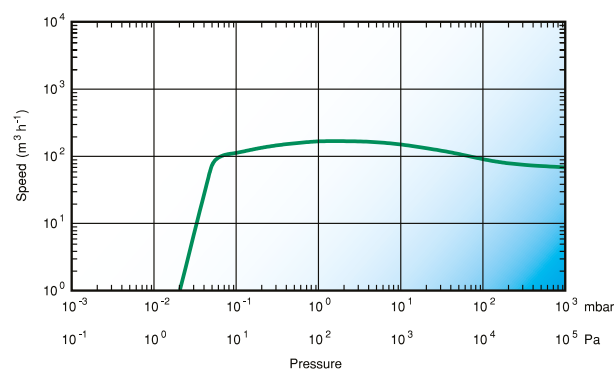
		iH160	iH1800/HTX
		50/60 Hz	50/60 Hz
Peak speed	m ³ h ⁻¹	165	1800
	cfm	97	1060
	l min ⁻¹	2,750	30,000
Ultimate pressure (typical with shaft seals purge only)	mbar	1 x 10 ⁻²	1 x 10 ⁻³
	Torr	7.5 x 10 ⁻³	7.5 x 10 ⁻⁴
	Pa	1	0.1
Typical purge flow	slm	4-44	4-70
Inlet connection		ISO63	ISO160
Outlet connection		NW40	NW40
Typical cooling water flow at 15 psi pressure drop	l h ⁻¹	120	240
	l min ⁻¹	2	4
Weight	kg	244	502
Power at ultimate ⁽¹⁾	kW	3.0	3.9
Rated motor power	kW	3.5	7.0
Oil capacity	l	0.85	1.6

All figures are typical without gas ballast

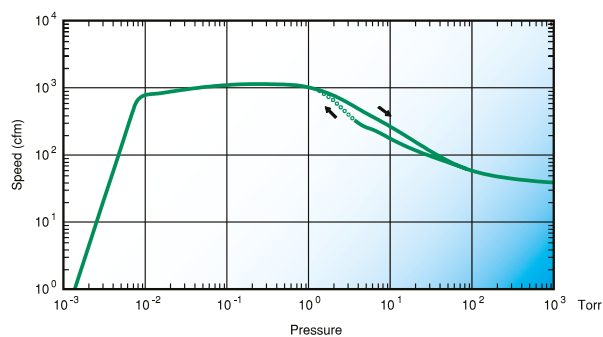
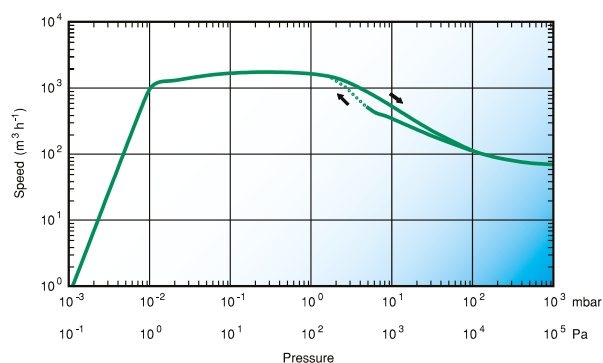
(1) Average power at 700T exhaust pressure

Speed curves

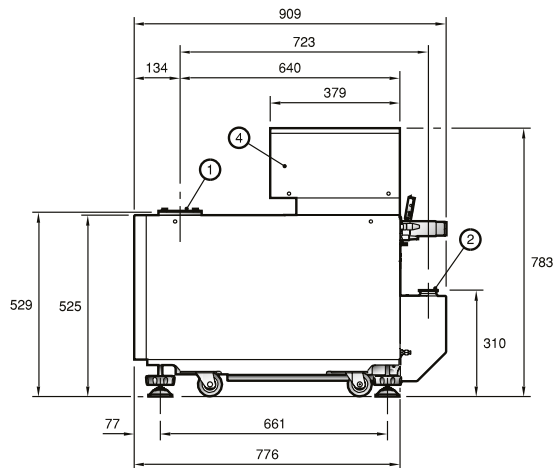
iH160



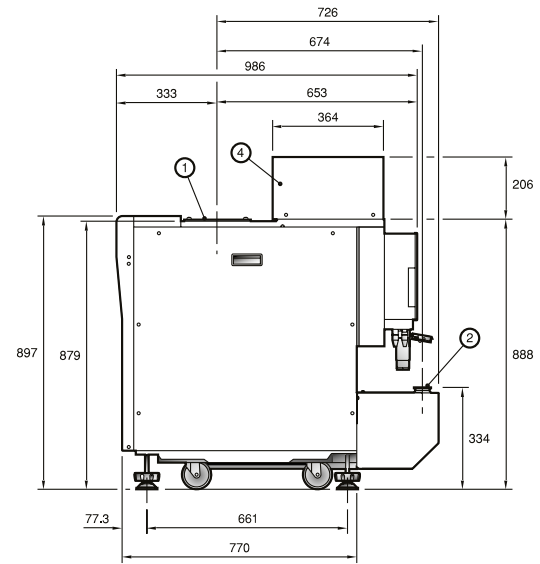
iH1800/HTX



Dimensions



iH160



iH1800/HTX



iH160

- 1 INLET
- 2 OUTLET
- 3 AIR EXTRACTION PORT
- 4 INVERTER BOX
- A SIDE VIEW
- B PLAN VIEW



iH1800

Ordering information

The iH80 and iH160 systems include as standard: an optimally designed 5-stage dry pump for harsh applications with enclosed water-cooled motor; on-board electronics and sensor control; integral gas purge systems; facilities for communication and control links for accessories and process tools.

The iH600 and iH1000 systems include an iH80 dry pump and incorporate a direct-drive booster.

	200/208 V	230 V	380/415 V	460 V
	50/60 Hz	60 Hz	50 Hz	60 Hz
iH80	A59000945	A59000957	A59000946	A59000908
iH160	A59010945	A59010957	A59010946	A59010908
iH600	A59020945	A59020957	A59020946	A59020908
iH1000	A59030945	A59030957	A59030946	A59030908

The iH1800 includes an iH160 dry pump and incorporates a large capacity direct-drive booster for high-throughput applications.

	200/208 V	230 V	380/415 V	460 V
	50/60 Hz	60 Hz	50 Hz	60 Hz
iH1800	A59040945	A59040957	A59040946	A59040908
iH1800HTX	A59042945	A59042957	A59042946	A59042908

All systems are fully enclosed and include seismic restraints.

The optional Pump Display Terminal (PDT) accessory enables you to manually operate the iH system and to display its status.

Edwards continually updates its products to match the evolving needs of the semiconductor industry and any specifications given here are subject to change without notice.

Global support

Edwards provides service and support through its operations in every major semiconductor and FPD region of the world. With more than 700 qualified service technicians and a site presence at nearly 100 fabs worldwide, customers benefit from the support of a trained service team – delivered locally and backed by a global infrastructure. Edwards services are designed to lower overall cost of ownership while increasing process equipment availability and throughput.

No other company can match Edwards for an on- and off-site, comprehensive customer service and support package that includes:

- Equipment repair and remanufacture
- Spares management
- Total vacuum management
- Materials management
- Gas system design
- Design and project management
- Turnkey project execution
- Kit management

