



# STP-iX455 Integrated Turbomolecular Pump

VACUUM SYSTEMS PRODUCT DATA

The **STP-iX455 turbomolecular pump** features an innovative magnetic bearing and motor drive system, providing a **50% reduction in vibration** compared to previous generation turbo pumps. An integrated controller eliminates the need for a conventional, rack-mounted controller and interconnecting cables, and does not require water cooling.



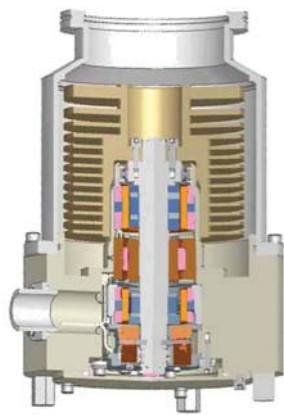
This pump features 450 l/s pumping speed for nitrogen. The STP-iX455 is an excellent fit for electron microscopy, metrology, lithography and other vibration-sensitive applications.

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## Features and Benefits

- Compact Design Including a Fully Integrated Controller
- Innovative, Self-Sensing Magnetic Bearing System
- Digital 5-Axis Control
- Vibration Levels Reduced by 50% Compared to the Existing Turbo Pumps
- Can be Configured to Run Corrosive Processes
- Automatic Balancing System (ABS) Standard
- Automatic Vibration Reduction (AVR) Standard
- UL Listed, CE Marked and SEMI® S2 Compliant

INNOVATIVE MAGNETIC BEARING SYSTEM



The patented self-sensing magnetic system and optimized motor drive system suppress noise across the frequency spectrum and achieve a reduction in vibration of 50% from current BOC Edwards turbo pumps.

Complete, digital 5-axis magnetic bearing control provides stability in case of external vibration or impact.

An Automatic Balancing System (ABS) and Automatic Vibration Reduction (AVR) system together automatically monitor for rotor imbalance to provide low vibration during both acceleration and operation at high speeds.

ACCESSORIES

A number of accessories are available to meet optimum configuration.



iPS-240

**iPS-240 Power Supply**

- > Operation from 100-200 VAC power source
- > STP-link communication port on front panel
- > Dock with the iDT-001 display unit to become an integrated power supply with an LCD display



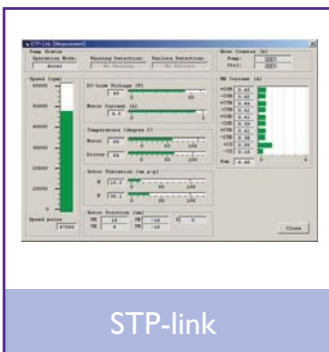
iPS-240 with iDT-001



iDT-001

**iDT-001 Display and Control Unit**

- > Provides visual feedback of performance and direct control of the pump
- > Plug-and-play unit connecting with the STP-iX455 or iPS-240
- > Docking connection available with the iPS-240
- > Displays operational status on the LCD panel



STP-link

**STP-link Monitoring Software**

- > Displays status of the operational STP-iX455 pump including:
  - Rotational speed
  - Motor status
  - Temperature
  - Rotor balance status
  - Magnet bearing current

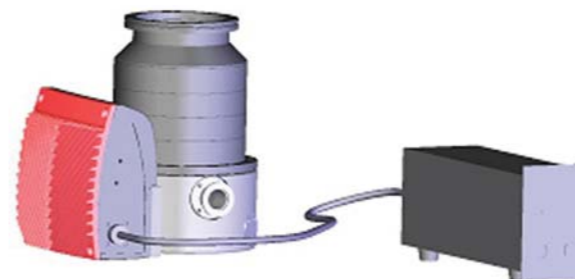
VARIOUS CONFIGURATIONS



**Stand-Alone Pump**

**STP-iX455**

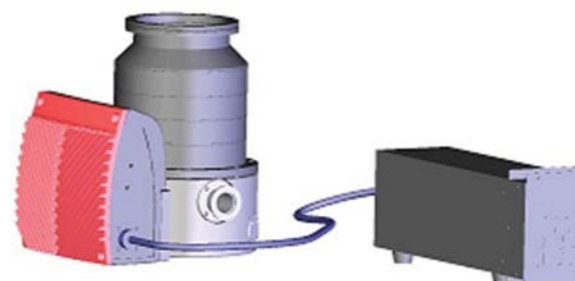
- > Operates with 48V DC power supply only
- > No need for interconnecting cables
- > No need for conventional rack-mounted control unit



**Pump and Power Source**

**STP-iX455 + iPS-240**

- > 100-240 ACV power source available
- > Remote signal operation
- > Compact size power source



**Pump, Power Source and Docked Display Unit**

**STP-iX455 + iDT-001 docked with iPS-240**

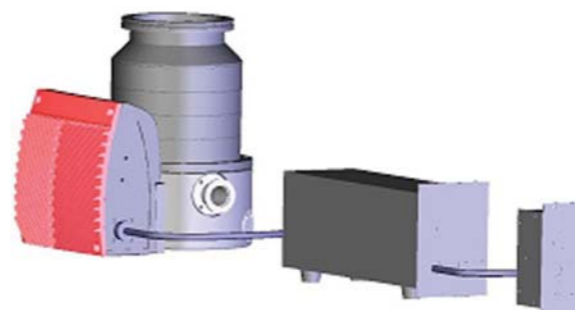
- > 100-240 ACV power source available
- > LCD display available
- > Manual operation available



**Pump and Display Unit**

**(A) STP-iX455 + iDT-001**

- > LCD display available
- > Manual operation available
- > Plug & play operation



**Pump, Power Supply and Display Unit**

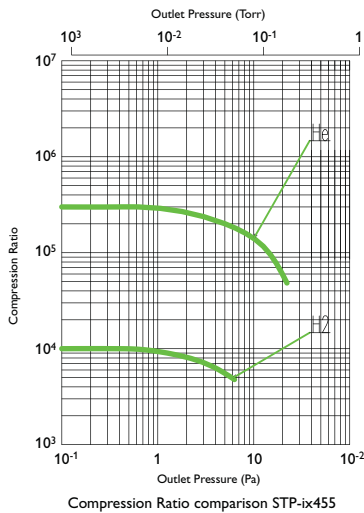
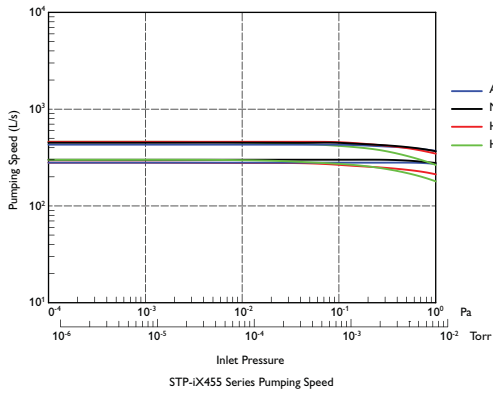
**(B) STP-iX455 + iPS-240+ iDT-001**

- > 100-240 ACV power source available
- > LCD display available
- > Manual operation available
- > Plug & play operation

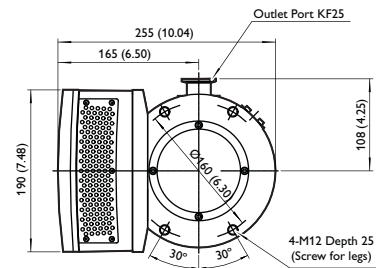
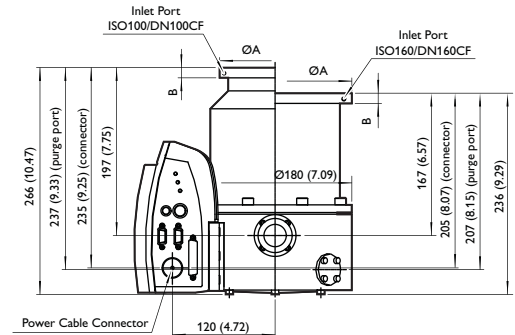
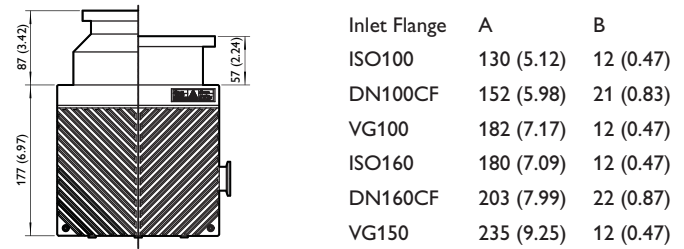
SPECIFICATIONS

	ISO100K	ISO160K	
Inlet flange size	ISO100K	ISO160K	
Pumping speed N <sub>2</sub>	300	450	Liters/Second
Pumping speed H <sub>2</sub>	300	460	Liters/Second
Compression ratio N <sub>2</sub>	>10 <sup>8</sup>	>10 <sup>8</sup>	
Compression ratio H <sub>2</sub>	1×10 <sup>4</sup>	1×10 <sup>4</sup>	
Ultimate pressure	10 <sup>-8</sup> order	10 <sup>-8</sup> order	Pa
Maximum allowable backing pressure	67	67	Pa
Rated speed	55000	55000	rpm
Starting time / Stop time	6 / 8	6 / 8	Minutes
Mounting position	Any orientation	Any orientation	
Input voltage	48	48	V DC
Vibration levels	< 0.01 (at rated speed)	< 0.01 (at rated speed)	µm(0-P)
Noise levels	< 50 (at rated speed)	< 50 (at rated speed)	dB
Communication interface	I/O Remote, RS232/485	I/O Remote, RS232/485	
Maximum input power	240	240	W
Environment temperature during operation	0-40 (32-104)	0-40 (32-104)	°C (°F)
Weight	15 (33)	16 (35.2)	Kg (lb)

SPECIFICATION GRAPHS



DIMENSIONS - MM (INCHES)



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Publication Number: PT6400895, Issue A